

SITE HEALTH & SAFETY PLAN

**EXCELLO PLATING FACILITY
4057 Goodwin Avenue
Los Angeles, CA 90039**

Prepared By:

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Excello Plating HASP Table of Contents

SECTION 1 -	EMERGENCY INFORMATION	1
SECTION 2 -	SITE DESCRIPTION	3
SECTION 3 -	ORGANIZATIONAL STRUCTURE	4
3. 1. ROLES AND RESPONSIBILITIES		4
3. 2. IDENTIFICATION OF OTHER SITE CONTRACTOR AND SUB-CONTRACTORS		5
3. 3. ORGANIZATION CHART		6
3. 4. EXCELLO PLATING SITE MAP		7
SECTION 4 -	JOB HAZARD ANALYSIS	8
4. 1. JOB HAZARD ANALYSIS		8
4. 2. EMPLOYEE NOTIFICATION OF HAZARDS AND OVERALL SITE INFORMATION PROGRAM		8
SECTION 5 -	SITE CONTROL	22
5. 1. SITE MAP		22
5. 2. SITE ACCESS		22
5. 3. SITE SECURITY		22
5. 4. SITE WORK ZONES		23
5. 5. EMERGENCY MEDICAL ASSISTANCE		24
5. 6. SITE COMMUNICATIONS		25
5. 7. BUDDY SYSTEM		25
SECTION 6 -	TRAINING	26
6. 1. TRAINING ELEMENTS TO BE COVERED FOR SITE WORKERS:		26
6. 2. SITE-SPECIFIC BRIEFINGS FOR VISITORS		26
6. 3. HASP INFORMATION AND SITE-SPECIFIC BRIEFINGS FOR WORKERS		27
6. 4. INITIAL TRAINING		27
6. 5. MANAGEMENT AND SUPERVISOR TRAINING		27
6. 6. QUALIFICATION OF TRAINERS		27
6. 7. TRAINING CERTIFICATION		27
6. 8. EMERGENCY RESPONSE		27
6. 9. REFRESHER TRAINING		27
6. 10. EQUIVALENT TRAINING		28
6. 11. TRAINING RECORDS		28
SECTION 7 -	MEDICAL SURVEILLANCE REQUIREMENTS	29
7. 1. SITE MEDICAL SURVEILLANCE PROGRAM		29
7. 2. COMMUNICATION BETWEEN THE SITE, PHYSICIANS, AND WORKERS		29
7. 3. MEDICAL RECORDKEEPING PROCEDURES		29
7. 4. PROGRAM REVIEW		30
SECTION 8 -	PERSONAL PROTECTIVE EQUIPMENT	31
8. 1. PPE ASSIGNMENTS		31
8. 2. PPE SELECTION CRITERIA		31
8. 3. USE OF PPE		33
8. 4. TRAINING		34
8. 5. RESPIRATORY PROTECTION		34
8. 6. HEARING CONSERVATION		34
8. 7. PPE MAINTENANCE & STORAGE		34
8. 8. EVALUATION OF PPE PROGRAM		34
SECTION 9 -	EXPOSURE MONITORING	35
9. 1. AIR MONITORING		35
9. 2. TASK-SPECIFIC AIR MONITORING PROCEDURES,		35
9. 3. EQUIPMENT CALIBRATION AND MAINTENANCE		35
9. 4. HANDLING AND MAINTENANCE OF MONITORING DATA		36
9. 5. NOISE MONITORING		36
SECTION 10 -	THERMAL STRESS	37
10. 1. IMPLEMENTATION CRITERIA		37
10. 2. PREVENTION STRATEGIES		37
10. 3. MEDICAL MANAGEMENT		37
10. 4. TRAINING		37

SECTION 11 - SPILL CONTAINMENT PROGRAM	38
11. 1. POTENTIAL SPILLS AND AVAILABLE CONTROLS.....	38
11. 2. INITIAL SPILL NOTIFICATION AND RESPONSE	38
11. 3. SPILL EVALUATION AND RESPONSE.....	38
11. 4. POST-SPILL EVALUATION.....	39
SECTION 12 - DECONTAMINATION PROGRAM	40
12. 1. SITE DECONTAMINATION FACILITIES.....	40
12. 2. DECONTAMINATION PROCEDURES FOR PERSONNEL AND PPE.....	40
12. 3. DECONTAMINATION PROCEDURES FOR EQUIPMENT.....	41
12. 4. MONITORING THE EFFECTIVENESS OF DECONTAMINATION PROCEDURES.....	41
SECTION 13 - EMERGENCY RESPONSE/CONTINGENCY PLAN.....	42
13. 1. MEDICAL EMERGENCY.....	42
13. 2. FIRE EMERGENCY.....	42
13. 3. SPILL/RELEASE	42
13. 4. NOTIFICATION.....	43
SECTION 14 - CONFINED SPACES PROGRAM	44
14. 1. IDENTIFICATION AND EVALUATION OF PERMIT SPACES	44
SECTION 15 - HOTWORK.....	45
15. 1. DESIGNATED AREAS AND OTHER HOT WORK LOCATIONS	45
15. 2. HOT WORK PERMIT.....	45
15. 3. FIRE WATCH	45
15. 4. HOT WORK SOPs	46
SECTION 16 - HAZARDOUS ENERGY CONTROL PROGRAM.....	47
SECTION 17 - FORMS AND DOCUMENTS.....	48
17. 1. DAILY SIGN-IN LOG	49
17. 2. INSTRUMENT DATA SHEET	50
17. 3. AIR MONITORING LOG FORM.....	51
17. 4. HOT WORK PERMIT (AVAILABLE ON SITE).....	52

Section 1 - Emergency Information

Contaminants of Concern: Plating chemicals, corrosives, heavy metals, cyanide solutions.

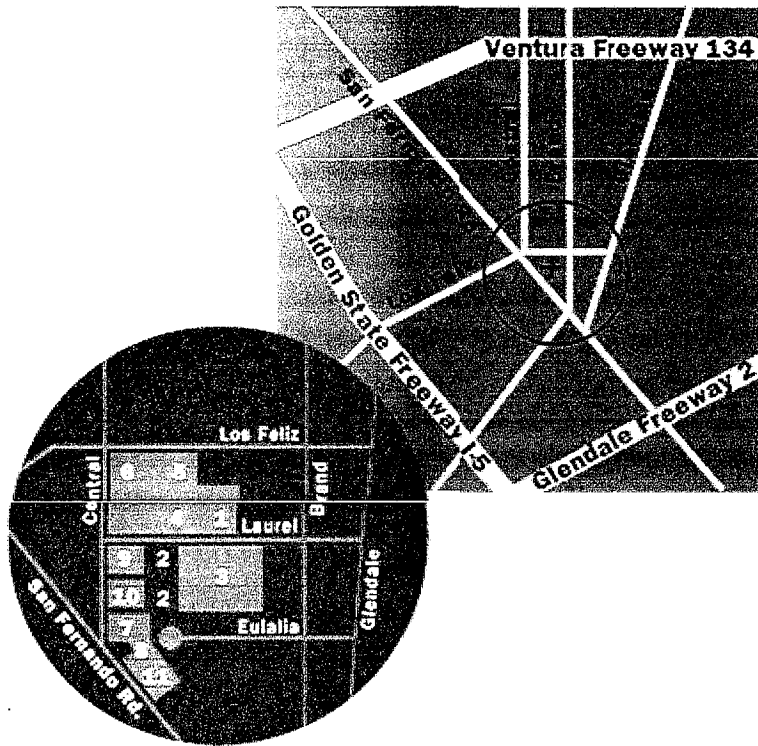
Minimum Level of Protection: Level D

Site Location	Excello Plating 4057 Goodwin Avenue Los Angeles, CA 90039
Contact Information	
Neil Frumkin Environmental Recovery Services (ERS)	(562) 427-7277 - Office (562) 788-0829 - Cell
Walter Vargas Environmental Recovery Services (ERS)	(562) 427-7277 - Office (562) 243-8774 - Cell
Jim Kapin Advanced Chemical Safety	(858) 874-5577 - Office (619) 990-5955 - Cell
EMERGENCY PHONE NUMBERS	
Fire/Ambulance/Police	9-1-1
Poison Control:	(800) 876-4766
Hospital:	Glendale Memorial Hospital and Health Center 1420 South Central Avenue, Los Angeles, CA 91204 (818) 502-2344 (Emergency Room)

FIRST AID FOR CORROSIVE EMERGENCIES

- Ingestion: DO NOT INDUCE VOMITING. Call Poison Control; follow instructions. Administer CPR, if necessary. Seek medical attention.
- Inhalation: Remove person from contaminated environment. DO NOT ENTER A CONFINED SPACE TO RESCUE SOMEONE WHO HAS BEEN OVERCOME UNLESS PROPERLY EQUIPPED AND A STANDBY PERSON IS PRESENT. Administer CPR if necessary. Seek medical attention.
- Skin Contact: Brush off dry material, remove wet or contaminated clothing. Flush skin thoroughly with water. Seek medical attention if irritation persists. Rescuers/Responders must wear appropriate PPE (as described in Section
- Eye Contact: Flush eyes with water for 15 minutes. Seek medical attention.
- Contingency Plan: Report incident to Project Manager and Health and Safety Manager after emergency procedures have been implemented.

HOSPITAL LOCATION MAP



Emergency Room is location #4

Hospital Directions:

- 1: Start out going EAST on GOODWIN AVE toward BRUNSWICK AVE. (0.1 miles)
- 2: Turn RIGHT onto ALGER ST.(0.2 miles)
- 3: Turn LEFT onto CHEVY CHASE DR. (0.2 miles)
- 4: Turn RIGHT onto SAN FERNANDO RD. (0.3 miles)
- 5: Turn LEFT onto W LOS FELIZ RD. (0.1 miles)
- 6: Turn RIGHT onto S CENTRAL AVE. (0.1 miles)
- 7: End at Glendale Memorial Hospital

Hospital Information:

Name - Glendale Memorial Hospital and Health Center
Address - 1420 South Central Avenue
City, State - Los Angeles, CA 91204
Phone - (818) 502-2344 (Emergency Room)

Section 2 - Site Description

The site is the former location of Excelllo Plating, located at 4057 Goodwin Avenue in Los Angeles, California. The site operated as a plating shop for many years. It consists of one large building, oriented north to south. The majority of site activities will take place in the middle section of the facility, which houses the former plating lines, associated tanks and metal finishing operations.

Site activities will consist of:

- Lab packing of small chemical containers
- Testing and identification of unknowns ("Hazcatting")
- Bulking or containerization of chemicals in drums, totes and vacuum truck
- Staging and shipping containerized chemicals
- Removal of equipment and small-scale demolition within the buildings

Surrounding properties are generally industrial, including a large grocery distribution center immediately north of the property and businesses east and west of the property. South of the property, across Goodwin, is a residential neighborhood. The closest residence is approximately 1000 feet from work operations.

Chemicals of concern are those found in plating operations, specifically acid solutions (hydrochloric acid, nitric acid, chromic acid), basic solutions (sodium hydroxide, ammonium hydroxide), cyanide solutions as well as possible heavy metal contamination (chrome, nickel). The chemicals of concern generally have limited volatility. The most significant potential route of exposure will be through dermal contact. Inhalation of mists is also a potential route of exposure when pumping or handling bulk liquids.

The primary focus of the Health and Safety Plan (HASP) is to prevent injuries to site workers. All work will be conducted per 29 CFR 1910.120 and 8 CCR 5192, including provision of adequate light and access to potable water as well as other issues addressed below. This HASP will also include measures to reduce or eliminate the possibility of an off-site release of any of the materials being handled. In all cases, all work at the Excelllo site will comply with all applicable federal, state and local requirements.

Section 3 - ORGANIZATIONAL STRUCTURE

This chapter of the Health and Safety Plan describes lines of authority, responsibility, and communication as they pertain to health and safety functions at this site. The purpose of this chapter is to identify the personnel who impact the development and implementation of the site health and safety plan and to describe their roles and responsibilities. This chapter also identifies other contractors and subcontractors involved in work operations and establishes the lines of communication among them for safety and health matters.

The organizational structure of this site's safety and health program is consistent with CAL/OSHA requirements in 29 CFR 1910.120(b)(2) and 8 CCR 5192(b)(2) and provides the following site-specific information:

- the general supervisor who has the responsibility and authority to direct all hazardous waste operations
- the site safety and health officer who has the responsibility and authority to develop and implement this HASP and verify compliance
- other personnel needed for hazardous waste operations and emergency response and their general functions and responsibilities
- the lines of authority, responsibility, and communication for safety and health functions

This section is reviewed and updated as necessary to reflect the current organizational structure at this site.

3. 1. Roles and Responsibilities

All personnel and visitors on this site must comply with the requirements of this HASP. The specific responsibilities and authority of management, safety and health, and other personnel on this site are detailed in the following paragraphs. A site organizational chart illustrating the hierarchy of personnel and lines of communication within this company and with additional contractors on site is found in Figure 1-1.

Project Manager (PM)

The Project Manager (PM) for this site is Neil Frumkin. The PM has responsibility and authority to direct all work operations. The PM coordinates safety and health functions with the Site Safety and Health Officer (SSHO), has the authority to oversee and monitor the performance of the SSHO, and bears ultimate responsibility for the proper implementation of this HASP. The specific duties of the PM are:

- Preparing and coordinating the site work plan; providing site supervisor(s) with work assignments and overseeing their performance.
- Coordinating safety and health efforts with the SSHO; ensuring effective emergency response through coordination with the Emergency Response Coordinator (ERC);
- Serving as primary site liaison with public agencies and officials and site contractors.
- The qualified alternate Project Manager (PM) for this site is Walter Vargas.

Site Safety and Health Officer (SSHO)

The Site Safety and Health Officer (SSHO) for this site is James Kapin. The SSHO has full responsibility and authority to develop and implement this HASP and to verify compliance. The SSHO reports to the Project Manager. The SSHO is on site or readily accessible to the site during all work operations and has the authority to halt site work if unsafe conditions are detected. The specific responsibilities of the SSHO are:

- Managing the safety and health functions on this site; serving as the site's point of contact for safety and health matters;

- Ensuring site monitoring, worker training, and effective selection and use of PPE; assessing site conditions for unsafe acts and conditions and providing corrective action; assisting the preparation and review of this HASP; maintaining effective safety and health records as described in this HASP; coordinating with the Emergency Response Coordinator (ERC), Site Supervisor(s), and others as necessary for safety and health efforts.
- The qualified alternate Site Safety and Health Officer (SSHO) for this site is Neal Langerman.

Emergency Response Coordinator (ERC)

The Emergency Response Coordinator (ERC) for this site is James Kapin. The ERC is responsible for assessing site conditions and directing and controlling emergency response activities in accordance with the Site Emergency Response Plan. The ERC reports to the Project Manager (PM). The ERC will ensure the evacuation, emergency transport, and treatment of site personnel and will notify the appropriate emergency response units and management staff in accordance with the emergency response plan of this HASP. Specific duties of the ERC include:

- Developing and reviewing the emergency response plan; conducting emergency response rehearsals; ensuring effective emergency response to and evacuation of the site; coordinating emergency response functions with the Site Safety and Health Officer (SSHO), and integrating site emergency response plans with the disaster, fire, and/or emergency response plans of local, state, and federal organizations and agencies.
- The qualified alternate Emergency Response Coordinator (ERC) for this site is Neal Langerman. The qualified second alternates for Emergency Response Coordinator (ERC) for this site are Neil Frumkin and Walter Vargas.

Site Supervisor

The Site Supervisor for this site is Walter Vargas. The Site Supervisor is responsible for field operations and reports to the Project Manager (PM). The Site Supervisor ensures the implementation of the HASP requirements and procedures in the field. The specific responsibilities of the Site Supervisor are:

- Executing the work plan and schedule as detailed by the PM; coordination with the Site Safety and Health Officer (SSHO) on safety and health; ensuring site work compliance with the requirements of this HASP.

Site Workers

Site workers are responsible for complying with this HASP, using the proper PPE, reporting unsafe acts and conditions, and following the work and safety and health instructions of the Project Manager (PM), Site Safety and Health Officer (SSHO), and Site Supervisor.

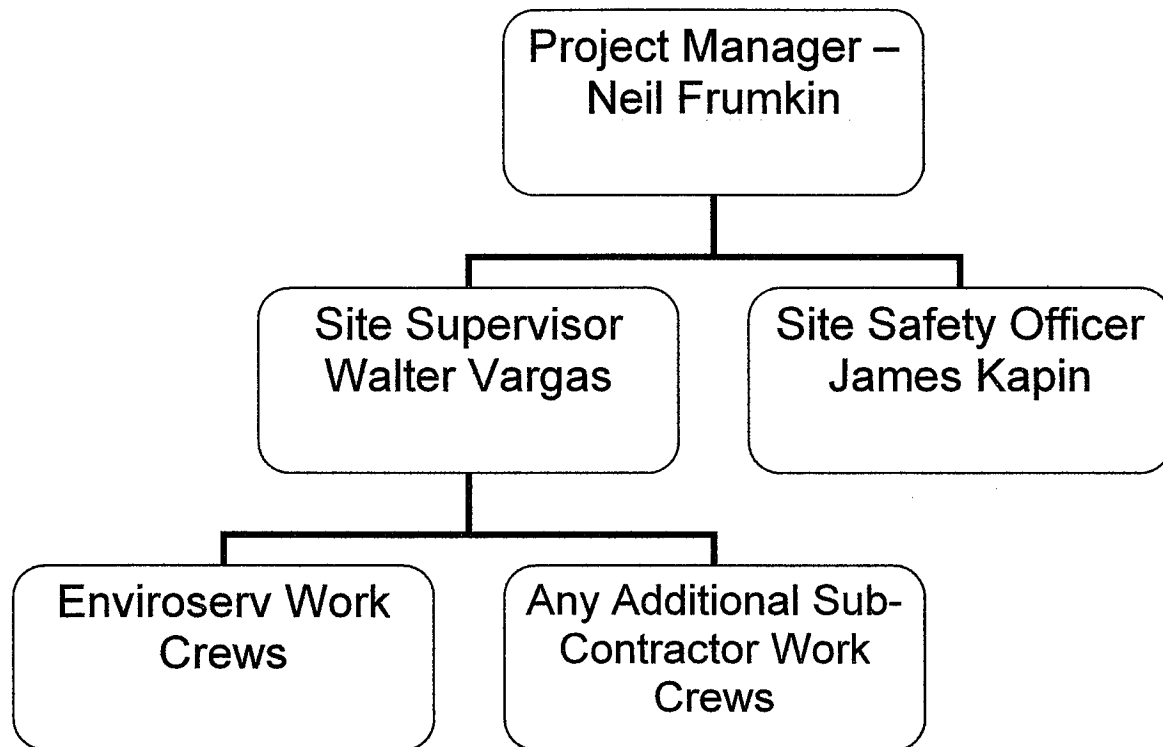
3. 2. Identification of Other Site Contractor and Sub-Contractors

No additional contractors or sub-contractors are planned for this project. If other contractors and subcontractors do perform work on this site, they will be listed in the table below. Safety and health lines of communication with these contractors are illustrated in Figure 1-1.

Company	Function
n/a	n/a

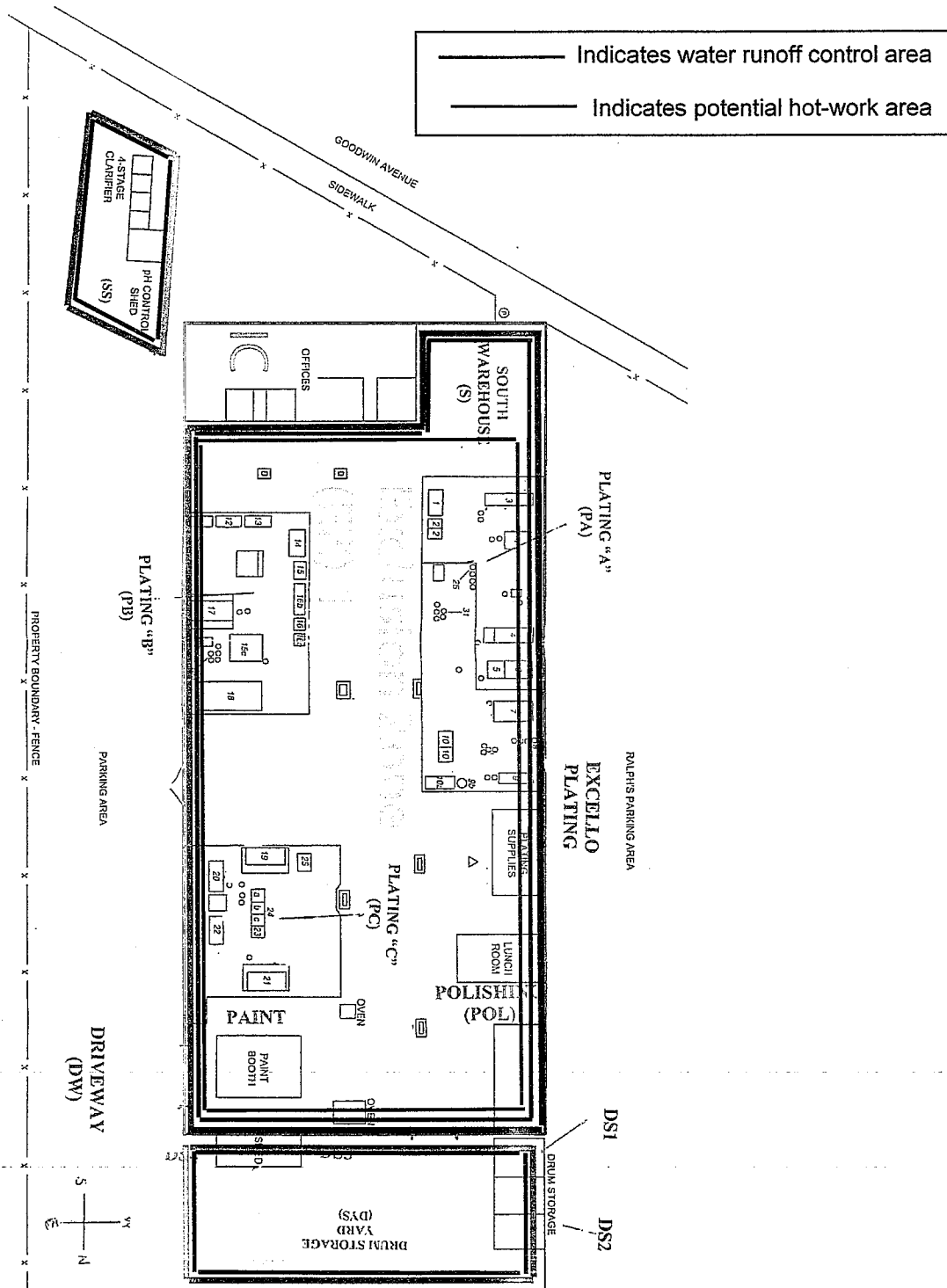
3. 3. Organization Chart

Figure 1-1 Organizational Chart (available on site)



3. 4. Excello PlatingSite Map

Insert site map here, showing control zones, key work locations, fire-safe areas for hot work, Locations of emergency equipment and supplies and other relevant information



Section 4 - Job Hazard Analysis

This chapter of the HASP describes the safety and health hazards associated with site work and the control measures selected to protect workers. The purpose of a job hazard analysis (JHA) is to identify the health and safety hazards associated with each site task and operation, and to evaluate the risks to workers. Using this information, appropriate control methods are selected to eliminate or control the identified risks.

The person responsible for ongoing job hazard analysis at this site is James Kapin.

4. 1. Job Hazard Analysis

Each site-specific JHA appears as a separate table below. Each JHA lists a task or operation required during site clean-up and the location(s) where that task or operation is performed. A single JHA may be used for a task/operation performed in multiple locations if the hazards, potential exposures, and controls are the same in each location.

Each JHA lists the chemical hazards associated with that task and their known or anticipated airborne concentrations during performance of the task. Each JHA also identifies anticipated physical and biological hazards and potential exposure levels or the likelihood of exposure. The final section of each JHA lists the control measures implemented to protect employees from exposure to the identified hazards. The information provided here is designed to satisfy the job hazard analysis requirements of 1910.120(b)(4)(ii)(A) and 8 CCR 5192 (b)(4) as well as the workplace hazard assessment requirements of 1910.132(d) and 8 CCR 3380.

Health hazard information for all chemical substance identified in site JHAs appears in hazard data sheets attached to this chapter. The primary chemicals of concern are:

- Chromium and Chromium compounds
- Hydrogen Chloride and Hydrochloric Acid
- Hydrogen Cyanide and Cyanide Salts
- Nitric Acid

These chemical substances were identified through preliminary sampling as well as from typical operations at an industrial plating facility. This list will be updated, and sampling methods and PPE recommendations will be revised, if necessary.

James Kapin will modify site-specific JHAs and the accompanying data sheets when:

- the scope of work is changed by adding, eliminating, or modifying tasks
- new methods of performing site tasks are selected
- observation of the performance of site tasks results in a revised characterization of the hazards
- new chemical, biological, or physical hazards are identified
- exposure data indicate changes in the concentration and/or likelihood of exposure
- new/different control measures are selected

When JHAs are modified, related provisions in other chapters of this HASP are modified as needed.

4. 2. Employee Notification of Hazards and Overall Site Information Program

The information in the JHAs and the attached data sheets is made available to all employees who could be affected. The person responsible for providing site information, this HASP, and any modifications to the HASP to other contractors and subcontractors working on this site is: James Kapin. Modifications to JHAs and the accompanying data sheets are communicated during routine briefings.

Consistent with paragraph (i) of HAZWOPER, other contractors and subcontractors will be informed about the nature and level of hazardous substances at this site, and the likely degree of exposure to workers who participate in site activities, prior to the time they begin their work activities.

Site-Specific Job Hazard Analysis			
Phase	Task/Operation	Location Where Task/Operation Performed	
Active Cleanup	Lab Packing	Plating Area, Paint Dept.	
Date: 10/13/05	JHA Created by:	James Kapin, MPH, CIH, REA	
Chemical Hazards			
Chemical Name	Source	Expected Concentration	Exposure Limit
Corrosives, metals, cyanide solutions	Mis-handling or breakage of containers during lab packing operations	negligible	NA
Physical Hazards			
Type of Hazard	Source	Likelihood	Exposure Limit
Corrosives - Storage and Use	Mis-handling or breakage of containers during lab packing operations	Unlikely	NA
Housekeeping	Prior conditions of the site	Likely	NA
Material Handling	Containers to be packed	Likely	NA
Control Measures Used:			
<p>Work Practices: Workers will keep their work area clean and orderly with adequate organization to prevent errors or mistakes. The following work practices will be followed to minimize material handling risks:</p> <p>1. Use a mechanical lifting device or a lifting aid where appropriate, 2. If you must lift, plan the lift before doing it. 3. Check your route for clearance. 4. Bend at the knees and use leg muscles when lifting. 5. Use the buddy system when lifting heavy or awkward objects. 6. Do not twist your body while lifting.</p> <p>The following practices will be followed when lab packing chemicals to minimize exposures:</p> <p>1. All work will be conducted in well ventilated areas. 2. Minimize contact and contact time with chemicals and gases. 3. Avoid walking through discolored areas, puddles, leaning on drums, or contacting anything that is likely to be contaminated. 4. Do not eat, drink, smoke and/or apply cosmetics in the hot or warm zones. 5. Use appropriate PPE</p>			
Level of PPE	Workers will wear Level D chemically protective clothing when lab packing. This will consist of sturdy work shoes, disposable coated tyvek-type coverall with integral boots, surgical type nitrile gloves and safety glasses.		
Upgrade PPE When:	PPE will be upgraded as necessary to protect against dermal contact (splash hazard) or inhalation. If bulk chemicals are handled, pumped, etc. workers will wear clothing as described for bulk chemical handling below. If air monitoring shows inhalation exposures greater than 1/2 of the "Threshold Limit Value" (TLV) established by the American Conference of Governmental Hygienists (ACGIH) for the most toxic chemical being handled, appropriate respiratory protective equipment will worn.		
Downgrade PPE When:	The PPE above represents the minimum level of PPE for this operation.		

Site-Specific Job Hazard Analysis				
Phase	Task/Operation	Location Where Task/Operation Performed		
Active Cleanup	Hazard Categorization	Plating Area, Pant Dept.		
Date: 10/13/05	JHA Created by:	James Kapin, MPH, CIH, REA		
Chemical Hazards				
Chemical Name	Source	Expected Concentration	Exposure Limit	
Corrosives, metals, cyanide solutions.	Mis-handling or breakage of containers during hazard categorization activities.	negligible	NA	
Potential exposure to unknown, toxic materials	Handling unknown chemicals	unknown	NA	
Physical Hazards				
Type of Hazard	Source	Likelihood	Exposure Limit	
Corrosives - Storage and Use	Mis-handling or breakage of containers during lab packing operations	Unlikely	NA	
Housekeeping	Prior conditions of the site	Likely	NA	
Material Handling	Containers to be packed	Likely	NA	
Control Measures Used:				
<p>Work Practices: Workers will keep their work area clean and orderly with adequate organization to prevent errors or mistakes.</p> <p>The following work practices will be followed to minimize material handling risks:</p> <ol style="list-style-type: none"> 1. Use a mechanical lifting device or a lifting aid where appropriate. 2. If you must lift, plan the lift before doing it. 3. Check your route for clearance. 4. Bend at the knees and use leg muscles when lifting. 5. Use the buddy system when lifting heavy or awkward objects. 6. Do not twist your body while lifting. <p>The following practices will be followed when handling chemicals to minimize exposures:</p> <ol style="list-style-type: none"> 1. All work will be conducted in well ventilated areas. 2. Minimize contact and contact time with chemicals and gases. 3. Avoid walking through discolored areas, puddles, leaning on drums, or contacting anything that is likely to be contaminated. 4. Do not eat, drink, smoke and/or apply cosmetics in the hot or warm zones. 5. Use appropriate PPE 				
Level of PPE	Workers will wear Level C chemically protective clothing when Hazatting including a 1/2 face Air Purifying Respirator (APR) with a multi-purpose vapor/particulate cartridge, similar to the Scott 7422-SDI cartridge. Attire will consist of sturdy work shoes, disposable, coated tyvek-type coverall with integral boots, surgical type nitrile gloves and safety glasses. When working with corrosive liquids, workers will wear a face shield over goggles, rather than safety glasses.			
Upgrade PPE When:	PPE will be upgraded as necessary to protect against dermal contact (splash hazard) or inhalation. If bulk chemicals are handled, pumped, etc. workers will wear clothing as described for bulk chemical handling below. If air monitoring shows inhalation exposures greater than 1/2 of the "Threshold Limit Value" (TLV) established by the American Conference of Governmental Hygienists (ACGIH) for the most toxic chemical being handled, appropriate respiratory protective equipment will worn.			
Downgrade PPE When:	The PPE above represents the minimum level of PPE for this operation.			

Site-Specific Job Hazard Analysis			
Phase	Task/Operation	Location Where Task/Operation Performed	
Active Cleanup	Chemical Bulking/Containerization	Plating Area, Paint Dept., Cyanide Destruction	
Date: 10/13/05	JHA Created by:	James Kapin, MPH, CIH, REA	
Chemical Hazards			
Chemical Name	Source	Expected Concentration	Exposure Limit
Corrosives, metals, cyanide solutions.	Splashes, spills or other leakage while handling bulk quantities	negligible	NA
Physical Hazards			
Type of Hazard	Source	Likelihood	Exposure Limit
Corrosives - Storage and Use	Mis-handling, spills or release during pumping operations	Unlikely	NA
Housekeeping	Prior conditions of the site	Likely	NA
Material Handling	Containers to be packed	Likely	NA
Machinery Hazards	Pumping equipment	Likely	NA
Control Measures Used:			
<p>Work Practices: Workers will keep their work area clean and orderly with adequate organization to prevent errors or mistakes.</p> <p>The following work practices will be followed to minimize material handling risks:</p> <p>1. Use a mechanical lifting device or a lifting aid where appropriate, 2. If you must lift, plan the lift before doing it. 3. Check your route for clearance. 4. Bend at the knees and use leg muscles when lifting. 5. Use the buddy system when lifting heavy or awkward objects. 6. Do not twist your body while lifting.</p> <p>The following practices will be followed when handling chemicals to minimize exposures:</p> <p>1. All work will be conducted in well ventilated areas, where possible, workers will stand up-wind of any open containers, vents, etc. 2. When pumping, all hose couplings will be wired or clipped closed and wrapped with appropriate absorbent material to prevent spray or mists. 3. All pumping operations will be conducted within appropriate secondary containment to prevent release of bulk materials. 4. Workers will minimize contact and contact time with chemicals and gases. 5. Avoid walking through discolored areas, puddles, leaning on drums, or contacting anything that is likely to be contaminated. 6. Do not eat, drink, smoke and/or apply cosmetics in the hot or warm zones. 7. Use appropriate PPE. 8. All materials to be pumped or bulked will be tested for compatibility prior to pumping or bulking. 9. When pumping or bulking a given hazard class, tanks or containers of all other hazard classes will be covered with plastic sheeting or similar. 10. Prior to pumping or bulking liquids any liquids, pH will be verified.</p>			
Level of PPE	Workers will wear Level C chemically protective clothing when including a 1/2 face Air Purifying Respirator (APR) with a multi-purpose vapor/particulate cartridge, similar to the Scott 7422-SDI cartridge. Attire will consist of sturdy work shoes, disposable, coated tyvek-type coverall with integral boots, surgical type nitrile gloves and safety goggles. When working with corrosive liquids, workers will wear chemically resistant over-boots, chemically resistant gloves, a splash apron over their tyvek suit and a face shield over goggles, rather than safety glasses.		
Upgrade PPE When:	PPE will be upgraded as necessary to protect against dermal contact (splash hazard) or inhalation. If additional splash protection is required, workers will wear chemically impervious suits, similar to a Kappler CPF3 garment. If air monitoring shows inhalation exposures greater than 5 times the "Threshold Limit Value" (TLV) established by the American Conference of Governmental Hygienists (ACGIH) for the most toxic chemical being handled, workers will wear a pressure-demand type SCBA for the duration of that operation.		
Downgrade PPE When:	The PPE above represents the minimum level of PPE for this operation.		

Site-Specific Job Hazard Analysis			
Phase	Task/Operation	Location Where Task/Operation Performed	
Active Cleanup	Equipment Removal/Interior Demolition	Entire Exclusion Zone	
Date: 10/13/05	JHA Created by:	James Kapin, MPH, CIH, REA	
Chemical Hazards			
Chemical Name	Source	Expected Concentration	Exposure Limit
Corrosives, metals, cyanide solutions.	Handling potentially contaminated materials	Unknown	NA
Physical Hazards			
Type of Hazard	Source	Likelihood	Exposure Limit
Corrosives - Storage and Use	Mis-handling or breakage of containers during removal/demolition activities	Unlikely	NA
Housekeeping	Prior conditions of the site	Likely	NA
Material Handling	Containers to be packed, materials to be moved, packaged	Likely	NA
Machinery Hazards	Pumping equipment	Likely	NA
Construction Hazards	Hand tools, power tools	Likely	NA
Control Measures Used: Work Practices: Workers will keep their work area clean and orderly with adequate organization to prevent errors or mistakes. The following work practices will be followed to minimize material handling risks:			
1. Use a mechanical lifting device or a lifting aid where appropriate, 2. If you must lift, plan the lift before doing it. 3. Check your route for clearance. 4. Bend at the knees and use leg muscles when lifting. 5. Use the buddy system when lifting heavy or awkward objects. 6. Do not twist your body while lifting. The following practices will be followed when handling chemicals to minimize exposures: 1. All work will be conducted in well ventilated areas. 2. Minimize contact and contact time with chemicals and gases. 3. Avoid walking through discolored areas, puddles, leaning on drums, or contacting anything that is likely to be contaminated. 4. Do not eat, drink, smoke and/or apply cosmetics in the hot or warm zones. 5. Use appropriate PPE.			
Workers will follow "Construction Safety Precautions" (see below) when working with hand and power tools			
Level of PPE	Workers will wear Level C chemically protective clothing when removing equipment and conducting limited demolition activities, including a 1/2 face Air Purifying Respirator (APR) with a multi-purpose vapor/particulate cartridge, similar to the Scott 7422-SDI cartridge. Attire will consist of sturdy work shoes, disposable, coated tyvek-type coverall with integral boots, leather work gloves over surgical type nitrile gloves and safety glasses. When working with corrosive liquids, workers will wear a face shield over goggles, rather than safety glasses.		
Upgrade PPE When:	PPE will be upgraded as necessary to protect against dermal contact (splash hazard) or inhalation. If bulk chemicals are handled, pumped, etc. workers will wear clothing as described for bulk chemical handling above. If air monitoring shows inhalation exposures greater than 1/2 of the "Threshold Limit Value" (TLV) established by the American Conference of Governmental Hygienists (ACGIH) for the most toxic chemical being handled, appropriate respiratory protective equipment will worn.		
Downgrade PPE When:	The PPE above represents the minimum level of PPE for this operation.		

Construction Safety Precautions Hazard Control	
Noise	<ol style="list-style-type: none"> 1. Wear hearing protection when equipment such as a jackhammer, cut saw, air compressor, blower or other heavy equipment is operating on the site. 2. Wear hearing protection whenever you need to raise your voice above normal conversational speech due to a loud noise source; this much noise indicates the need for protection.
Electric Shock	<ol style="list-style-type: none"> 1. Maintain appropriate distance from overhead utilities; 20-foot minimum clearance from power lines required, 10-foot minimum clearance from shielded power lines. 2. Use ground-fault circuit interrupters as required. 3. Perform lockout/tagout procedures (Section 14). 4. Use three-pronged plugs and extension cords. 5. Contact your local underground utility-locating service. 6. Follow code requirements for electrical installations in hazardous locations.
Physical Injury	<ol style="list-style-type: none"> 1. Wear hard hats and safety glasses when on site. 2. Maintain visual contact with the equipment operator and wear orange safety vest when heavy equipment is used on site. 3. Avoid loose-fitting clothing. 4. Prevent slips, trips and falls; keep work area uncluttered. 5. Keep your hands away from moving parts.
Ladders	<ol style="list-style-type: none"> 1. Make sure ladder rungs are sturdy and free of cracks. 2. Use ladders with secure safety feet. 3. Pitch ladders at a 4:1 ratio. 4. Secure ladders at the top when possible. 5. Use non-conductive ladders near electrical wires.
Fire Control	<ol style="list-style-type: none"> 1. Smoke only in designated areas. 2. Keep flammable liquids in closed containers. 3. Keep site clean; avoid accumulating combustible debris such as paper. 4. Follow Hot Work Safety Procedures when welding or performing other activities requiring an open flame. 5. Isolate flammable and combustible materials from ignition sources. 6. Ensure fire safety integrity of equipment installations.
Welding & Cutting	<ol style="list-style-type: none"> 1. Conduct fire safety evaluation. 2. Complete Hot Work Permit (Appendix N). 3. Follow JSA guidelines for hot work in Appendix N. 4. Ensure flammable materials are protected from hot work, sources of ignition. 5. Ensure fire watch/fire extinguisher is on standby by hot work location.
Cleaning Equipment	<ol style="list-style-type: none"> 1. Wear appropriate PPE to avoid skin and eye contact with chemicals and cleaning materials. 2. Stand upwind to minimize any potential inhalation exposure. 3. Dispose of spent cleaning solutions and rinses accordingly.
First aid kit, emergency eye wash station, fire extinguisher and absorbent pads will be located on-site.	

Site-Specific Job Hazard Analysis				
Phase	Task/Operation	Location Where Task/Operation Performed		
Demobilization	Container Staging/ Loading/ Shipping	Staging Area		
Date: 10/13/05	JHA Created by:	James Kapin, MPH, CIH, REA		
Chemical Hazards				
Chemical Name	Source	Expected Concentration	Exposure Limit	
Corrosives, metals, cyanide solutions.	Mis-handling or breakage of containers	negligible	NA	
Physical Hazards				
Type of Hazard	Source	Likelihood	Exposure Limit	
Corrosives - Storage and Use	Mis-handling or breakage of containers	Unlikely	NA	
Housekeeping	Prior conditions of the site	Likely	NA	
Material Handling	Loaded chemical containers/pallets	Likely	NA	
Control Measures Used:				
<p>Work Practices: Workers will keep their work area clean and orderly with adequate organization to prevent errors or mistakes.</p> <p>The following work practices will be followed to minimize material handling risks:</p> <p>1. Use a mechanical lifting device or a lifting aid where appropriate, 2. If you must lift, plan the lift before doing it. 3. Check your route for clearance. 4. Bend at the knees and use leg muscles when lifting. 5. Use the buddy system when lifting heavy or awkward objects. 6. Do not twist your body while lifting.</p> <p>The following practices will be followed when handling chemicals to minimize exposures:</p> <p>1. All work will be conducted in well ventilated areas. 2. Minimize contact and contact time with chemicals and gases. 3. Avoid walking through discolored areas, puddles, leaning on drums, or contacting anything that is likely to be contaminated. 4. Do not eat, drink, smoke and/or apply cosmetics in the hot or warm zones. 5. Use appropriate PPE</p>				
Level of PPE	Workers will wear Level D chemically protective clothing when handling chemical containers. This will consist of sturdy work shoes, disposable coated tyvek-type overall with integral boots, surgical type nitrile gloves and safety glasses.			
Upgrade PPE When:	PPE will be upgraded as necessary to protect against dermal contact (splash hazard) or inhalation. If bulk chemicals are handled, pumped, etc. workers will wear clothing as described for bulk chemical handling below. If air monitoring shows inhalation exposures greater than 1/2 of the "Threshold Limit Value" (TLV) established by the American Conference of Governmental Hygienists (ACGIH) for the most toxic chemical being handled, appropriate respiratory protective equipment will worn.			
Downgrade PPE When:	The PPE above represents the minimum level of PPE for this operation.			

CHEMICAL IDENTIFICATION							
Chemical Name:	Chromium and Chromium Compounds		CAS #:	7440-47-3	UN No	1759	Formula: Cr
Synonyms:	Chrome, Chromium		Description:	Appearance and odor vary depending upon the specific compound..			
PHYSICAL PROPERTIES							
BP:	4788°F	MW:	52.0	LEL:	NA	NFPA Fire Rating:	NA
FRZ/MLT:	MLT: 3452°F	VP:	0 mmHg (approx)	UEL:	NA	NFPA Health Rating:	NA
F.I.P:	NA	VD:	NA			NFPA Reactivity Rating:	NA
Sp. Gr.:	7.14	IP:	NA			NFPA Sp. Inst.:	NA
EXPOSURE GUIDELINES							
CAL/OSHA		NIOSH		ACGIH		Related Information	
PEL-TWA ppm:	NA	REL-TWA ppm:	NA	TLV-TWA ppm:	NA	AIHA Emergency Response Planning Guidelines (ERPGs):	
PEL-TWA mg/m3:	1 (Cr)	REL-TWA mg/m3:	0.5	TLV-TWA mg/m3:	0.05	EPRG-1/EPRG-2/EPRG3: NA	
PEL-TWA mg/m3:	0.5 (CrII, CrIII)	REL-TWA mg/m3:	0.001 (Cr VI)	TLV-TWA mg/m3:	0.01 (Cr VI)		
PEL-STEL ppm:	NA	REL-STEL ppm:	NA	TLV-STEL ppm:	NA		
PEL-STEL mg/m3:	NA	REL-STEL mg/m3:	NA	TLV-STEL mg/m3:	NA		
PEL-C ppm:	NA	REL-C ppm:	NA	TLV-C ppm:	NA		
PEL-C mg/m3:	0.1 (Cr VI)	REL-C mg/m3:	NA	TLV-C mg/m3:	NA		
Skin Notation:		Skin Notation:		Skin Notation:		Carcinogen Classifications:	
IDLH ppm: NA		IDLH mg/m3: 15				IARC-1, NIOSH - Ca, NTP TLV-A1	
HEALTH INFORMATION							
Symptoms: sensitization dermatitis							
Health Effects: cumulative lung damage; dermatitis							
Target Organ: eyes, skin, respiratory system							
EMERGENCY RESPONSE INFORMATION (see next page)							

First Aid:

EYES: First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician. IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.

SKIN: IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water. If symptoms such as redness or irritation develop, IMMEDIATELY call a physician and be prepared to transport the victim to a hospital for treatment.

INHALATION: IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. IMMEDIATELY call a physician and be prepared to transport the victim to a hospital even if no symptoms (such as wheezing, coughing, shortness of Breathing, or burning in the mouth, throat, or chest) develop. Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or equal to that advised under Protective Clothing.

INGESTION: Some heavy metals are VERY TOXIC POISONS, especially if their salts are very soluble in water (e.g., lead, chromium, mercury, bismuth, osmium, and arsenic). IMMEDIATELY call a hospital or poison control center and locate activated charcoal, egg whites, or milk in case the medical advisor recommends administering one of them. Also locate Ipecac syrup or a glass of salt water in case the medical advisor recommends inducing vomiting. Usually, this is NOT RECOMMENDED outside of a physician's care.

If advice from a physician is not readily available and the victim is conscious and not convulsing, give the victim a glass of activated charcoal slurry in water or, if this is not available, a glass of milk, or beaten egg whites and IMMEDIATELY transport victim to a hospital. If the victim is convulsing or unconscious, do not give anything by mouth, assure that the victim's airway is open and lay the victim on his/her side with the Headache lower than the body. DO NOT INDUCE VOMITING.

IMMEDIATELY transport the victim to a hospital.

OTHER: Since this chemical is a known or suspected carcinogen you should contact a physician for advice regarding the possible long term health effects and potential recommendation for medical monitoring. Recommendations from the physician will depend upon the specific compound, its chemical, physical and toxicity properties, the exposure level, length of exposure, and the route of exposure. (NTP, 1992)

REACTIVITY: Reacts violently with NH_4NO_3 , N_2O_2 , Li, NO, KClO_3 , SO_2 and other strong oxidizers (NTP, 1992)

Nonfire Spill Response:

SMALL SPILLS AND LEAKAGE: If you spill this chemical, dampen the solid spill material with 5% ammonium hydroxide, then transfer the dampened material to a suitable container. Use absorbent paper dampened with 5% ammonium hydroxide to pick up any remaining material. Your contaminated clothing and the absorbent paper should be sealed in a vapor-tight plastic bag for eventual disposal. Wash all contaminated surfaces with 5% ammonium hydroxide followed by washing with a strong soap and water solution. Do not reenter the contaminated area until the Safety Officer (or other responsible person) has verified that the area has been properly cleaned.

STORAGE PRECAUTIONS: You should store this material in a refrigerator. (NTP, 1992)

Fire Response: NA

CHEMICAL IDENTIFICATION							
Chemical Name:	HYDROGEN CHLORIDE		CAS #:	7647-01-0	UN No	1789	Formula: ClH
Synonyms:	Anhydrous hydrogen chloride; Aqueous hydrogen chloride (i.e., Hydrochloric acid, Muriatic acid)		Description:	Colorless to slightly yellow gas with a pungent, irritating odor. [Note: Shipped as a liquefied compressed gas.]			
PHYSICAL PROPERTIES							
BP:	-121°F	MW:	36.5	LEL:	NA	NFPA Fire Rating:	0
FRZ/MLT:	FRZ: -174°F	VP:	40.5 atm	UEL:	NA	NFPA Health Rating:	3
FLP:	NA	VD:	1.27			NFPA Reactivity Rating:	0
Sp. Gr.:	NA	IP:	12.74 eV			NFPA Sp. Inst.:	NA
EXPOSURE GUIDELINES							
CAL/OSHA		NIOSH		ACGIH		Related Information	
PEL-TWA ppm:	NA	REL-TWA ppm:	NA	TLV-TWA ppm:	NA	AIHA Emergency Response Planning Guidelines (ERPGs): EPRG-1/EPRG-2/EPRG-3: 3 ppm/20 ppm/150 ppm	
PEL-TWA mg/m3:	NA	REL-TWA mg/m3:	NA	TLV-TWA mg/m3:	NA		
PEL-STEL ppm:	NA	REL-STEL ppm:	NA	TLV-STEL ppm:	NA		
PEL-STEL mg/m3:	NA	REL-STEL mg/m3:	NA	TLV-STEL mg/m3:	NA		
PEL-C ppm:	5	REL-C ppm:	5	TLV-C ppm:	5		
PEL-C mg/m3:	7	REL-C mg/m3:	7	TLV-C mg/m3:	7.5		
Skin Notation:		Skin Notation:		Skin Notation:		Carcinogen Classifications:	
IDLH ppm:	50	IDLH mg/m3:	NA			IARC-3	
HEALTH INFORMATION							
Symptoms: nose, throat, laryngeal inflammation; coughing, throat burns, choking; eye, skin burns; dermatitis; in animals: laryngeal spasms, pulmonary edema							
Health Effects: irritation-eye, nose, throat, skin---marked; lung edema; dental erosion							
Target Organ: eyes, skin, respiratory system							
EMERGENCY RESPONSE INFORMATION (see next page)							

First Aid: INHALATION: remove person to fresh air; keep him warm and quiet and get medical attention immediately; start artificial respiration if breathing stops. INGESTION: have person drink water or milk; do NOT induce vomiting.

EYES: immediately flush with plenty of water for at least 15 min. and get medical attention; continue flushing for another 15 min. if physician does not arrive promptly.

SKIN: immediately flush skin while removing contaminated clothing; get medical attention promptly; use soap and wash area for at least 15 min. (USCG, 1999)

Reactivity: CHEMICAL PROFILE: Calcium phosphide and hydrochloric acid undergo a very energetic reaction, Mixing hydrochloric acid in equal molar portions with any of the following substances in a closed container caused the temperature and pressure to increase: acetic anhydride, ammonium hydroxide, 2-aminoethanol, chlorosulfonic acid, ethylene diamine, ethyleneimine, oleum, propylene oxide, sodium hydroxide, sulfuric acid, vinyl acetate, NFPA 1991. When hydrochloric acid and perchloric acid are mixed, the hydronium ion formed decomposes spontaneously with violence, With water may generate heat

Nonfire Spill Response: Neutralizing Agents for Acids and Caustics: Flush with water; apply powdered limestone, slaked lime, soda ash, or sodium bicarbonate. (USCG, 1999)

Fire Response: Note: Most foams will react with the material and release corrosive/toxic gases.

SMALL FIRES: CO2 (except for Cyanides), dry chemical, dry sand, alcohol-resistant foam.

LARGE FIRES: Water spray, fog or alcohol-resistant foam. Move containers from fire area if you can do it without risk. Do not use straight streams. Dike fire control water for later disposal; do not scatter the material.

FIRE INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not get water inside containers. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from the ends of tanks. (DOT, 1996)

CHEMICAL IDENTIFICATION								
Chemical Name:	HYDROGEN CYANIDE		CAS #:	74-90-8	UN No	1613	Formula:	CHN
Synonyms:	Formonitrile, Hydrocyanic acid, Prussic acid		Description:	Colorless or pale-blue liquid or gas (above 78°F) with a bitter, almond-like odor.				
PHYSICAL PROPERTIES								
BP:	78°F (96%)	MW:	27.0	LEL:	5.6%	NFPA Fire Rating:	NA	
FRZ/MLT:	FRZ: 7°F (96%)	VP:	630 mmHg	UEL:	40.0%	NFPA Health Rating:	NA	
FLP:	0°F (96%)	VD:	NA			NFPA Reactivity Rating:	NA	
Sp. Gr.:	0.69	IP:	13.60 eV			NFPA Sp. Inst.:	NA	
EXPOSURE GUIDELINES								
CAL/OSHA		NIOSH		ACGIH		Related Information		
PEL-TWA ppm:	10	REL-TWA ppm:	NA	TLV-TWA ppm:	NA	AIHA Emergency Response Planning Guidelines (ERPGs):		
PEL-TWA mg/m3:	11	REL-TWA mg/m3:	NA	TLV-TWA mg/m3:	NA	EPRG1/EPRG-2/EPRG-3: NA/10 ppm/25 ppm		
PEL-STEL ppm:	NA	REL-STEL ppm:	4.7	TLV-STEL ppm:	NA			
PEL-STEL mg/m3:	NA	REL-STEL mg/m3:	5	TLV-STEL mg/m3:	NA			
PEL-C ppm:	NA	REL-C ppm:	NA	TLV-C ppm:	4.7			
PEL-C mg/m3:	NA	REL-C mg/m3:	NA	TLV-C mg/m3:	5			
Skin Notation:		Skin Notation:		Skin Notation:		Carcinogen Classifications:		
IDLH ppm:	50	IDLH mg/m3:	na			NA		
HEALTH INFORMATION								
Symptoms: asphyxia & death at high levels; weakness; headaches; confusion; nausea, vomiting; increased rate & depth of respiration, or slow & gasping respiration								
Health Effects: acute systemic toxicity; cumulative systemic toxicity (cyanosis)								
Target Organ: central nervous system, cardiovascular system, thyroid, blood								
EMERGENCY RESPONSE INFORMATION								
First Aid:								
Eye: If this chemical contacts the eyes, immediately wash the eyes with large amounts of water, occasionally lifting the lower and upper lids. Get medical attention immediately. Contact lenses should not be worn when working with this chemical.								
Skin: If this chemical contacts the skin, immediately flush the contaminated skin with water. If this chemical penetrates the clothing, immediately remove the clothing and flush the skin with water. Get medical attention promptly.								
Breathing: If a person breathes large amounts of this chemical, move the exposed person to fresh air at once. If breathing has stopped, perform mouth-to-mouth resuscitation. Keep the affected person warm and at rest. Get medical attention as soon as possible.								
Swallow: If this chemical has been swallowed, get medical attention immediately.								
CHEMICAL PROFILE: A deadly human poison, a weak acid smelling of bitter almonds. It contains hydrogen cyanide dissolved in water. On contact with acids or when heated it emits deadly hydrogen cyanide gas.								
Nonfire Spill Response: ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. DO NOT GET WATER INSIDE CONTAINERS. (DOT, 1996)								
SMALL FIRES: Dry chemical, CO2 or water spray. LARGE FIRES: Dry chemical, CO2, alcohol-resistant foam or water spray. Move containers from fire area if you can do it without risk. Dike fire control water for later disposal; do not scatter the material. FIRE INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not get water inside containers. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.								
ALWAYS stay away from the ends of tanks.								

CHEMICAL IDENTIFICATION									
Chemical Name:	NITRIC ACID		CAS #:	7697-37-2		UN No	2031	Formula:	HNO3
Synonyms:	Aqua fortis, Engravers acid, Hydrogen nitrate, Red fuming nitric acid (RFNA), White fuming nitric acid (WFNA)			Description:	Colorless, yellow, or red, fuming liquid with an acrid, suffocating odor				
PHYSICAL PROPERTIES									
BP:	181°F	MW:	63.0	LEL:	NA	NFPA Fire Rating:	0		
FRZ/MLT:	FRZ: -44°F	VP:	48 mmHg	UEL:	NA	NFPA Health Rating:	3		
FLP:	NA	VD:	NA			NFPA Reactivity Rating:	0		
Sp. Gr.:	(77°F): 1.50	IP:	11.95 eV			NFPA Sp. Inst.:	Oxidizer		
EXPOSURE GUIDELINES									
CAL/OSHA		NIOSH		ACGIH		Related Information			
PEL-TWA ppm:	2	REL-TWA ppm:	2	TLV-TWA ppm:	2	AIHA Emergency Response Planning Guidelines (ERPGs):			
PEL-TWA mg/m3:	5	REL-TWA mg/m3:	5	TLV-TWA mg/m3:	5.2	NA			
PEL-STEL ppm:	NA	REL-STEL ppm:	4	TLV-STEL ppm:	4				
PEL-STEL mg/m3:	NA	REL-STEL mg/m3:	10	TLV-STEL mg/m3:	10				
PEL-C ppm:	NA	REL-C ppm:	NA	TLV-C ppm:	NA				
PEL-C mg/m3:	NA	REL-C mg/m3:	NA	TLV-C mg/m3:	NA				
Skin Notation:		Skin Notation:		Skin Notation:		Carcinogen Classifications:			
IDLH ppm:	25	IDLH mg/m3:	NA			NA			
HEALTH INFORMATION									
Symptoms: eye, mucous membrane, skin irritation; delayed pulmonary edema, pneumonitis, bronchitis; dental erosion									
Health Effects: acute lung damage; irritation-eye, nose, throat, skin---marked									
Target Organ: eyes, skin, respiratory system, teeth									
continued on next page									

EMERGENCY RESPONSE INFORMATION (Nitric Acid)

First Aid: Warning: Nitric acid is extremely corrosive. Caution is advised. Signs and Symptoms of Acute Nitric Acid Exposure: Signs and symptoms of acute ingestion of nitric acid may be severe and include increased salivation, intense thirst, difficulty swallowing, chills, pain, and shock. Oral, esophageal, and stomach burns are common. Vomitus generally has a coffee-ground appearance. The potential for circulatory collapse is high following ingestion of nitric acid. Acute inhalation exposure may result in sneezing, hoarseness, choking, laryngitis, dyspnea (shortness of breath), respiratory tract irritation, and chest pain. Bleeding of nose and gums, ulceration of the nasal and oral mucosa, pulmonary edema, chronic bronchitis, and pneumonia may also occur. If the eyes have come in contact with nitric acid, irritation, pain, swelling, corneal erosion, and blindness may occur. Dermal exposure may result in severe burns, pain, and dermatitis (red, inflamed skin).

Emergency life-support Procedures: Acute exposure to nitric acid may require decontamination and life support for the victims. Emergency personnel should wear protective clothing appropriate to the type and degree of contamination. Air-purifying or supplied-air respiratory equipment should also be worn, as necessary. Rescue vehicles should carry supplies such as plastic sheeting and disposable plastic bags to assist in preventing spread of contamination.

Inhalation Exposure: 1. Move victims to fresh air. Emergency personnel should avoid self-exposure to nitric acid. 2. Evaluate vital signs including pulse and respiratory rate

Reactivity: AIR AND WATER REACTIONS: Fumes in air. Reacts violently with water producing heat, fumes, and spattering.

CHEMICAL PROFILE: ignites upon contact with alcohols, amines, ammonia, beryllium alkyls, boranes, dicyanogen, hydrazines, hydrocarbons, hydrogen, nitroalkanes, powdered metals, silanes, or thiols (Bretherick 1979 p.174) A mixture of finely divided magnesium and nitric acid is explosive (Pieters 1957 p.28). Nitric acid oxidizes magnesium phosphide with incandescence (Mellor 8:842. 1946-47). Experiments show that mixtures of over 50% nitric acid by weight in acetic anhydride may act as detonating explosives (BCISC 42:2. 1971). An etching agent of equal portions of acetone, nitric acid, and 75% acetic acid exploded 4 hours after it was prepared and placed in a closed bottle. This is similar to a formulation for the preparation of tetranitromethane a sensitive explosive (Chem. Eng. News 38: 56. 1960). Phosphine is violently decomposed by concentrated nitric acid, and flame is produced.. An explosion occurs when nitric acid is brought into contact with phosphorus trichloride (Comp. Rend. 28:86). The reaction of sodium azide and strong nitric acid is energetic (Mellor8, Supp 2:315. 1967). Reacts violently with water with the production of heat, fumes, and spattering. (REACTIVITY, 1999)

Nonfire Spill Response: Keep material out of water sources and sewers. Build dikes to contain flow as necessary. Use water spray to knock-down vapors. Neutralize spilled material with crushed limestone, soda ash, or lime. Vapor knockdown water is corrosive or toxic and should be diked for containment.

Land spill: Dig a pit, pond, lagoon, holding area to contain liquid or solid material. Dike surface flow using soil, sand bags, foamed polyurethane, or foamed concrete. Absorb bulk liquid with fly ash or cement powder. Neutralize with agricultural lime (CaO), crushed limestone (CaCO₃) or sodium bicarbonate (NaHCO₃).

Water spill: Neutralize with agricultural lime (CaO), crushed limestone (CaCO₃), or sodium bicarbonate (NaHCO₃). (AAR, 1999)

Fire Response: Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind; keep out of low areas. Ventilate closed spaces before entering them. Wear positive pressure breathing apparatus and special protective clothing. Use water spray.

Small fires: water, dry chemical, or soda ash. **Large fires:** flood fire area with water. Move container from fire area if you can do so without risk. Spray cooling water on containers that are exposed to flames until well after fire is out. For massive fire in cargo area, use unmanned hose holder or monitor nozzles; if this is impossible, withdraw from area and let fire

Section 5 - Site Control

This site control program is designed to reduce the spread of hazardous substances from contaminated areas to clean areas, to identify and isolate contaminated areas of the site, to facilitate emergency evacuation and medical care, to prevent unauthorized entry to the site, and to deter vandalism and theft.

The site control program includes the elements specified in 29 CFR 1910.120(d) and 8 CCR 5192 (d) and provides the following site-specific information:

- a site map, indicating site perimeter and work zones
- site access procedures
- site security
- site work zones including standard operating procedures
- use of the buddy system
- both internal (on-site) and external communications

James Kapin is responsible for evaluating site conditions and for verifying that the site control program functions effectively. The site control program is updated regularly to reflect current site conditions, work operations, and procedures.

5. 1. Site Map

A map of this site, showing site boundaries, designated work zones, and points of entry and exit is provided in Section 3-4 (available on site).

5. 2. Site Access

Access to this site is restricted to reduce the potential for exposure to its safety and health hazards. During hours of site operation, site entry and exit is authorized only at the point(s) identified in Figure 3-1. Entry and exit at these points is controlled by fencing. When the site is not operating, access to the site is controlled by a security contractor.

Visitors to the site register with Neil Frumkin or Walter Vargas, and are escorted at all times. Visitors are expected to comply with the requirements of this HASP. Visitors who want to enter contaminated areas of the site must provide documentation that they have the required training and medical evaluation and must receive a site-specific briefing about protecting themselves from site hazards, recognizing site zones demarcations, and following emergency evacuation procedures. PPE for visitors is provided by Neil Frumkin or Walter Vargas.

5. 3. Site Security

Security at this site is maintained during both working hours and non-working hours to prevent unauthorized entry; removal of contaminated material from the exclusion zone; exposure of unauthorized, unprotected people to site hazards; and increased hazards due to vandalism and theft.

Neil Frumkin is responsible for establishing and maintaining site security during working hours. This site takes the following measures for security during working hours:

- Security is maintained in the Support Zone and at Access Control Points to ensure only authorized entrants access the site.
- A fence or other physical barrier is erected around the perimeter of the site to prevent unauthorized entry or exit.
- Signs have been posted around the perimeter of the site to warn of the site dangers and prohibition of unauthorized entry.

Neil Frumkin is responsible for establishing and maintaining site security during non-working hours.

The following measures have been taken for security during non-working hours:

- All doors to buildings and/or trailers are locked and equipment is secured after working hours.
- An outside security firm is used to provide site surveillance after working hours.

5. 4. Site Work Zones

This site is divided into three (3) major zones, described below and shown in Figure 3-1. These zones are characterized by presence or absence of biological and chemical hazards and the activities performed within them. Zone boundaries are clearly marked at all times and the flow of personnel among the zones is controlled. The site is monitored for changing conditions that may warrant adjustment of zone boundaries. Zone boundaries are adjusted as necessary to protect personnel and clean areas. Whenever boundaries are adjusted, zone markings are also changed and workers are immediately notified of the change.

The following criteria were considered in establishing the site work zones:

- Required clean-up activities.
- Sampling results for air and surface contaminants.
- Potential for fire.
- Physical, chemical, toxicological, and other characteristics of substances present.
- Physical and topographical features of the site.
- Weather conditions, particularly the direction of prevailing winds relative to the locations of the support zone and other uncontaminated areas onsite.

Exclusion Zone

The Exclusion Zone is the area where hazardous substance is known or suspected to be present and pose the greatest potential for exposure. Remediation operations (site clean-up) are performed in the Exclusion Zone. At this site, the Exclusion Zone boundaries are marked with yellow boundary tape. Personnel and equipment will enter and exit the Exclusion Zone from the designated access points in the Contamination Reduction Zone (CRZ), shown in Figure 3-1.

Personnel in the Exclusion Zone will adhere to the following SOPs:

Exclusion Zone (ExZ) SOPs

- While working in the Exclusion Zone, site workers use the buddy system.
- Use monitoring equipment and tools that are safe for the working environment.
- Use ground-fault circuit interrupters (GFCIs) when necessary to prevent electric shock.
- Use three-wire grounded extension cords for portable electric tools and appliances.
- Keep loose-fitting clothing or loose long hair away from moving machinery.
- Use signaling to direct heavy equipment operating in tight quarters.
- No refueling engines while equipment is running. No refueling engines while equipment is running.
- No ignition sources within 50 feet of refueling areas.
- Lower all blades and buckets to the ground and set parking brakes before shutting off vehicles.
- Never exceed the rated load capacity of a vehicle.
- Check in and out of this zone at the designated access point(s).
- Use the buddy system at all times.
- Wear the PPE required for this zone (see PPE section of this HASP).
- Perform air monitoring as required for this zone (see Exposure Monitoring section of this HASP).
- No smoking, eating, or drinking.
- No matches, lighters, or open flame.

- Monitor self and buddy for signs of heat or cold stress or chemical overexposure.
- Alert supervisor to signs of changing or unanticipated hazards.
- No horseplay.
- Monitor self and buddy for PPE rips, tears, and/or damage.

Contamination Reduction Zone (CRZ)

The CRZ is located between the Exclusion Zone and the Support Zone (clean zone). Its primary purpose is for decontamination of workers and equipment. The CRZ also serves as a buffer between the Exclusion Zone and Support Zone, to limit the potential for contamination to spread to the Support Zone and outlying areas. At this site, the CRZ boundaries are marked with yellow Boundary Tape.

Based on monitoring results, the CRZ boundaries may be adjusted to ensure that the Support Zone remains uncontaminated. Workers and equipment exit the Exclusion Zone through the designated access point(s) into the CRZ. Workers and equipment are then decontaminated in the CRZ, according to the procedures specified in the Decontamination section of this HASP. Workers and equipment then exit the CRZ into the Support Zone through the designated access points, shown in Figure 3-1.

If necessary, emergency decontamination procedures are implemented. Emergency decontamination procedures are described in the site's emergency response program.

Personnel in the CRZ will adhere to the following SOPs:

Contamination Reduction Zone (CRZ) SOPs

- Check in and out of this zone at the designated access point(s).
- Wear the PPE required for this zone (see PPE section of this HASP).
- Perform air and surface sampling as required for this zone (see Exposure Monitoring section of this HASP).
- Use monitoring equipment and tools that are safe for the working environment.
- No smoking, eating, or drinking.
- No matches, lighters, or open flame.
- Monitor self and buddy for signs of heat or cold stress or chemical overexposure.
- Alert supervisor to signs of changing or unanticipated hazards.
- No horseplay.

In addition, site personnel are trained to recognize and use hand signals when visual contact is possible but noise or PPE can inhibit voice communication. These hand signals are listed below in Table 5-6

Support Zone

The Support Zone is the clean area of the site, beyond the outer boundary of the CRZ. Administrative, clerical, and other support functions are based in the Support Zone. There should be no contamination in the Support Zone. Air and surface monitoring are conducted in the Support Zone as needed to ensure that it remains uncontaminated. If contamination is detected, zone boundaries are adjusted until corrective action is taken and monitoring results indicate that this zone is again uncontaminated.

The Support Zone is shown in Figure 3-1 and its boundaries are marked by Yellow Boundary Tape. While working Within the Support Zone, personnel will adhere to the following SOPs

Support Zone (SZ) SOPs

- Alert supervisor to signs of changing or unanticipated hazards. No horseplay. Perform air and surface sampling as required for this zone (see Exposure Monitoring section of this HASP).

Figure 3-1 Map of Site Boundaries, Work Zones, and Entry/Exit Points (available on site)

5. 5. Emergency Medical Assistance

The nearest emergency medical assistance selected to support this site is:

Address/Location:	Organization:	Telephone:
1420 South Central Avenue, Los Angeles, CA 91204	Glendale Memorial Hospital and Health Center	(818) 502-2344 (Emergency Room)

A map to this facility is located in Section 1 – Emergency Information (page 5).

5. 6. Site Communications

The following communication equipment is used to support on-site communications:

- Two-way radios are available

A current list of emergency contact numbers is posted in the Command Area.

Hand Signals

Signal	Meaning
Thumbs down	No
Both arms waving upright above head	Need assistance/send support
Stand with hands on waist or grab partner's wrist	Exit immediately
One fist raised above head	Stop immediately
Arms horizontal and circling out to sides	Situation under control

5. 7. Buddy System

While working in the Exclusion Zone, site workers use the buddy system. The buddy system means that personnel work in pairs

The responsibilities of workers using the buddy system include:

- Remaining in close visual contact with partner
- periodically checking the integrity of partner's PPE,
- Observing partner for signs of heat stress or other difficulties,
- Providing partner with assistance as needed or requested,

Section 6 - Training

The site training program is designed to ensure that workers receive the training they need to work safely on this site. Site safety and health training requirements are based on the job hazard assessments contained in Chapter 2 of this HASP and relevant CAL/OSHA requirements. At this site, James Kapin oversees the implementation of this training program and is responsible for ensuring that employees are adequately and currently trained for all tasks they are asked to perform. Employees who have not been trained to a level required by their job function and responsibility are not permitted to participate in or supervise field activities.

This training program is consistent with the requirements of 29 CFR 1910.120(e) and 8 CCR 5192 (e) and addresses the following site-specific information:

- Training For Site Workers
- Site Briefings For Visitors And Workers
- Initial Hazwoper Training (40 Or 24 Hr)
- Supervised Field Experience
- Management And Supervisor Training
- Qualification Of Trainers
- Training Certification
- Emergency Response Training ##
- Refresher Training
- Equivalent Training
- Training Records
- Emergency Response Training Is Addressed In Hasp Chapter 11, Emergency Response Plan.

6. 1. Training Elements to be Covered for Site Workers:

- Names Of Personnel And Alternates Responsible For Site Safety And Health
- Safety, Health And Other Hazards Present On The Site
- Use Of PPE
- Work Practices By Which The Employee Can Minimize Risks From Hazards
- Safe Use Of Engineering Controls And Equipment On The Site
- Medical Surveillance Requirements Detailed In Chapter 5 Of This Hasp
- Decontamination Procedures Detailed In Chapter 10 Of This Hasp
- The Emergency Response Plan Detailed In Chapter 11 Of This Hasp
- Confined Space Entry Procedures Detailed In Chapter 13 Of This Hasp
- The Spill Containment Program Detailed In Chapter 9 Of This Hasp
- The Site Control Plan Detailed In Chapter 3 Of This Hasp

Respirator use, in accordance with 29 CFR 1910.134 and 8 CCR 5144 is required in addition to the elements described above

6. 2. Site-Specific Briefings for Visitors

A site-specific briefing is provided to all site visitors who enter this site beyond the site entry point. For visitors, the site-specific briefing provides information about site hazards, the site lay-out including work zones and places of refuge, the emergency alarm system and emergency evacuation procedures, and other pertinent safety and health requirements as appropriate.

6. 3. HASP Information and Site-Specific Briefings for Workers

Site personnel review this HASP and are provided a site-specific briefing prior to the commencement of work to ensure that employees are familiar with this HASP and the information and requirements it contains. Additional briefings are provided as necessary to notify employees of any changes to this HASP because of information gathered during ongoing site characterization and analysis. Conditions for which we schedule additional briefings include, but are not limited to: changes in site conditions, changes in the work schedule/plan, newly discovered hazards, and incidents occurring during site work.

6. 4. Initial Training

Initial training requirements are based on a worker's potential for exposure and compliance with the requirements of 29 CFR 1910.120(e)(3) and 8 CCR 5192 (e)(3). Personnel at this site must successfully complete 40-hour initial HAZWOPER training consistent with the requirements of 29 CFR 1910.120(e)(3)(i) and 8 CCR 5192 (e)(3)(i) in order to work in contaminated areas. In addition, such personnel provide documentation of training.

6. 5. Management and Supervisor Training

On-site managers and supervisors who are directly responsible for or who supervise workers engaged in hazardous waste operations receive, in addition to the appropriate level of worker HAZWOPER training described above, 8 additional hours of specialized supervisory training, in compliance with 29 CFR 1910.120(e)(4) and 8 CCR 5192 (e)(4). Training received by managers and supervisors includes information regarding the Employer's safety and health programs well as the Spill containment program

6. 6. Qualification of Trainers

Only instructors qualified in accordance with 29 CFR 1910.120(e)(5) and 8 CCR 5192 (e)(5) are used to train workers for this site. Qualified instructors have either completed a training program for teaching the subjects they are expected to teach or have the academic credentials and instructional experience necessary for teaching the subjects.

6. 7. Training Certification

Employees and supervisors that receive and complete the necessary training and field experience are certified when they complete the necessary training. A written certificate is given to each person so certified. Any person who has not been so certified or who does not meet the requirements of equivalent training is prohibited from engaging in hazardous waste operations on this site.

6. 8. Emergency Response

Emergency response training is addressed in Chapter 11 of this HASP, Emergency Response Plan.

6. 9. Refresher Training

All workers on this site including managers and supervisors receive annual HAZWOPER refresher training consistent with the requirements of 29 CFR 1910.120(e)(8) and 8 CCR 5192 (e)(8). The following topics (at a minimum) will be addressed:

- Review of chemical hazards
- Review of physical hazards
- Review of PPE including levels of protection
- Review of respiratory protection
- Review of safety procedures
- Review of emergency response procedures

6. 10. Equivalent Training

This site accepts prior academic training or job site experience in lieu of HAZWOPER initial training for workers and supervisors, described in paragraphs (e)(1)-(e)(4) of the standard. In accordance with 29 CFR 1910.120 (e)(9) and 8 CCR 5192 (e)(9), Enviroserv certifies that all workers have appropriate training and will provide a copy of that certification to the worker upon request.

6. 11. Training Records

Enviroserv maintains written certification of the successful completion of applicable training requirements for each Enviroserv worker. Training records are maintained up-to-date and are retained onsite at the Command Area/ Support Zone.

An employee sign off sheet indicating that each worker has reviewed a copy of this HASP and understands its contents are stored at the same location.

Section 7 - Medical Surveillance Requirements

The medical surveillance section of the Health and Safety Plan describes how worker health status is monitored at this site. Medical surveillance is used when there is the potential for worker exposure to hazardous substance at levels above CAL/OSHA permissible exposure limits or other published limits. The purpose of a medical surveillance program is to medically monitor worker health to ensure that personnel are not adversely affected by site hazards. The provisions for medical surveillance at this site are based on the site characterization and job hazard analysis found in Section 4 of this HASP and are consistent with CAL/OSHA requirements in 29 CFR 1910.120(f) and 8 CCR 5192 (f).

The person with responsibility for ensuring this program is implemented and maintained is James Kapin.

7. 1. Site Medical Surveillance Program

Medical surveillance requirements are based on a worker's potential for exposure as determined by the site characterization and job hazard analysis documented in Section 4 of this HASP and on compliance with the requirements of 29 CFR 1910.120(f)(2) and 8 CCR 5192 (f)(2). Based on the potential for worker exposure to hazardous substance or health hazards at this site, the medical surveillance program at this site contains the following provisions:

- All personnel who enter contaminated areas of this site are covered by the medical surveillance program. In addition, all workers assigned to tasks requiring the use of respirators receive medical examinations in accordance with 29 CFR 1910.134(e) to ensure they are physically capable to perform the work and use the equipment.
- All medical examinations and procedures are performed by or under the supervision of a licensed physician and are provided to workers free of cost, without loss of pay, and at a reasonable time and place.

7. 2. Communication Between the Site, Physicians, and Workers

The medical facility providing medical monitoring and overexposure examinations required by personnel at this site

Name: Medical Center of Santa Ana
Location: 2222 South Main Street, Santa Ana, CA 92707
Phone: (714) 751-9022

The site has provided information about typical site hazards and potential exposure levels, work activities, and PPE requirements, and other information as required by CAL/OSHA in 29 CFR 1910.120(f)(6) and 8 CCR 5192 (f)(6) to the above-mentioned facility. The site will also make this information available to site personnel and/or their personal physicians as needed.

7. 3. Medical Recordkeeping Procedures

Enviroserv Corporate medical recordkeeping procedures are consistent with the requirements of 29 CFR 1910.1020 and are described in the company's overall safety and health program. A copy of that program is available at Enviroserv Main Office.

The following items are maintained in worker medical records:

- Physician's medical opinion of fitness for respirator protection (pre-placement, periodic)
- Exposure monitoring results

Records required under this medical surveillance program, consistent with 1910.120(f)(8), are kept accurate and updated and are available on site at Command Area.

7. 4. Program Review

Every year, the medical program is reviewed to ensure its effectiveness. The Enviroserv Corporate Health and Safety Officer is responsible for this review. At a minimum, this review consists of:

- Review of accident and injury records and medical records to determine whether the causes of accidents and illness are promptly investigated and whether corrective measures are taken wherever possible,
- Evaluation of the appropriateness of required medical tests on the basis of site exposures, and
- Review of emergency treatment procedures and emergency contacts list to ensure they are site-specific, effective, and current.

Section 8 - Personal Protective Equipment

This chapter of the HASP describes how personal protective equipment (PPE) is used to protect against employee exposures to hazardous substances and hazardous conditions on this site. Exposure hazards from the decontamination process are also considered.

The person with the overall responsibility for the PPE program is James Kapin.

8. 1. PPE Assignments

(pending air monitoring results, the following assignments have been made)

Lab Packing

Workers will wear Level D chemically protective clothing when lab packing. This will consist of sturdy work shoes, disposable coated tyvek-type coverall with integral boots, surgical type nitrile gloves and safety glasses.

Hazard Categorization:

Workers will wear Level C chemically protective clothing when Hazcatting including a 1/2 face Air Purifying Respirator (APR) with a multi-purpose vapor/particulate cartridge, similar to the Scott 7422-SDI cartridge. Attire will consist of sturdy work shoes, disposable, coated tyvek-type coverall with integral boots, surgical type nitrile gloves and safety glasses. When working with corrosive liquids, workers will wear a face shield over goggles, rather than safety glasses.

Chemical Bulking/Containerization:

Workers will wear Level C chemically protective clothing when bulking or containerizing chemicals including a 1/2 face Air Purifying Respirator (APR) with a multi-purpose vapor/particulate cartridge, similar to the Scott 7422-SDI cartridge. Attire will consist of sturdy work shoes, disposable, coated tyvek-type coverall with integral boots, surgical type nitrile gloves and safety goggles. When working with corrosive liquids, workers will wear chemically resistant over-boots, chemically resistant gloves, a splash apron over their tyvek suit and a face shield over goggles, rather than safety glasses.

Equipment Removal/Interior Demolition:

Workers will wear Level C chemically protective clothing when removing equipment and conducting limited demolition activities, including a 1/2 face Air Purifying Respirator (APR) with a multi-purpose vapor/particulate cartridge, similar to the Scott 7422-SDI cartridge. Attire will consist of sturdy work shoes, disposable, coated tyvek-type coverall with integral boots, leather work gloves over surgical type nitrile gloves and safety glasses. When working with corrosive liquids, workers will wear a face shield over goggles, rather than safety glasses.

Container Staging/ Loading/ Shipping:

Workers will wear Level D chemically protective clothing when handling chemical containers. This will consist of sturdy work shoes, disposable coated tyvek-type coverall with integral boots, surgical type nitrile gloves and safety glasses.

8. 2. PPE Selection Criteria

Site safety and health hazards are eliminated or reduced to the greatest extent possible through engineering controls and work practices. Where hazards are still present, a combination of engineering controls, work practices, and PPE are used to protect employees.

An initial level of PPE is assigned to each task to provide an adequate barrier to exposure hazards. Initial PPE ensembles are selected based on the anticipated route(s) of entry of the hazardous substances on site and their concentration. Ensemble materials are selected using permeation data supplied by individual manufacturers. Materials providing the greatest duration of protection have been chosen. Tear and seam strength of the PPE are also considered to ensure ensemble durability while

work is performed. When necessary, multiple layers of protection are used to accommodate the range of hazards that may be encountered. Where possible, employees are provided with a range of component sizes to ensure properly fitted PPE.

The following criteria are used in selecting PPE levels at this site.

Use of Level B Protection

Employees use Level B protection during tasks that have or potentially have the following characteristics:

- The identity and concentration of site contaminants are known and a high degree of respiratory protection is needed.
- The atmosphere contains hazardous substances at concentrations exceeding the published exposure limit for which there is no available cartridge/canister.
- The atmosphere contains hazardous substances at concentrations which exceed the use limits (rating or maximum use factor) of the available air purifying respiratory protection.
- Contact with hazardous substances is likely, but the contaminants do not pose a skin absorption hazard.
- The atmosphere contains less than 19.5 percent oxygen.
- The atmosphere contains incompletely identified hazardous substances, but the presence of high levels of chemicals harmful to/capable of being absorbed through the skin is unlikely.
- The atmospheres contains IDLH concentrations of specific substances that present severe inhalation hazards but do not pose a skin absorption hazard.

Use of Level C Protection

Employees use Level C protection during tasks that have or potentially have the following characteristics:

- Liquid splashes, atmospheric conditions, or other direct contact with hazardous substances exist or are likely but will not adversely affect or be absorbed through exposed skin.
- The atmosphere contains hazardous substances at concentrations which can be adequately controlled using an available air-purifying respirator and cartridge/canister.
- IDLH conditions are not present.
- The atmosphere contains between 19.5 and 23.5% oxygen.

In accordance with 29 CFR 1910.134(d)(3)(iii)(B)(2) and 8 CCR 5144 (d)(3)(C), a cartridge/canister change schedule has been determined. Cartridges and canisters used with air-purifying respirators on this site are replaced when any of the following occurs:

- a NIOSH-approved end of service life indicator (ESLI) is activated,
- the service life identified in this HASP has passed (see JHAs for service life determinations)
- inhalation is restricted

Use of Level D Protection

Employees use Level D protection during tasks that have the following characteristics:

- The atmosphere contains no known or suspected hazardous substances at concentrations that meet or exceed the published exposure limit.
- Contact with hazardous levels of any chemicals through splashes, immersion, or by other means will not occur.
- There is no potential for unexpected inhalation or contact with hazardous levels of any chemical

8. 3. Use of PPE

Site-specific PPE ensembles and materials are identified below . These ensembles are consistent with Appendix B of 29 CFR 1910.120 and 8 CCR 5192. PPE is used in accordance with manufacturers' recommendations.

Level B Equipment	
Item	Model or description
Hooded chemical resistant coveralls	Kappler CPF3 or similar
Gloves, outer, chemical-resistant	North 17 mil butyl or similar
Gloves, inner, chemical-resistant	4 mil surgical type nitrile
Hard hat	Type 2A or similar
Face shield	polycarbonate
SCBA	Scott "Air Pack" w/ 30 minute bottles
Level C Equipment	
Item	Model or description
Hooded chemical resistant coveralls	coated Tyvek QC type or similar
Gloves, outer, chemical-resistant	North 17 mil butyl or similar
Gloves, inner, chemical-resistant	4 mil surgical type nitrile
Hard hat	Type 2A or similar
Face shield	polycarbonate
Half-face air purifying	Scott XCEL with 7422-SDI cartridges
Level D Equipment	
Item	Model or description
Coveralls/Standard Work Clothes	coated Tyvek QC type coverall
Boots/shoes, chemical-resistant steel toe and shank	Employee owned
Boots, outer, chemical-resistant (disposable)	Butyl/Nitrile
Safety glasses	
Hard hat	Type 2A or similar
Face shield	polycarbonate
Gloves	Leather

Criteria for PPE Upgrades and Downgrades

The table below shows the action level(s) and/or conditions that result in a PPE upgrade or downgrade at this site. These upgrades and downgrades are required for any employee wearing the level of PPE described below. Since PPE is primarily used as a barrier to hazardous substance exposure, airborne concentrations are monitored routinely, in accordance with Chapter 7, Exposure Monitoring

PPE Upgrades		
Initial PPE	Upgrade Action Level/Conditions	PPE Modifications
Level B	None	
Level C	Airborne Levels in excess of 5xTLV of most toxic component	SCBA/Chemically Protective Clothing
Level D	Airborne Levels in excess of 1/2 the TLV of the most toxic component	1/2 face APR

PPE Downgrades		
Initial PPE	Downgrade Action Level/Conditions	PPE Modifications
Level B	Airborne levels less than 5x the TLV for the most toxic component	1/2 face APR
Level C	Airborne levels less than 1/2 TLV of most toxic component	No respirator required

James Kapin has the authority to upgrade or downgrade PPE in a timely manner to respond to changing site conditions and to protect employee health and safety. Routine evaluation of the effectiveness of the PPE program is conducted as identified in Section 6.7 below.

Procedures for Determining Work Duration

James Kapin identifies task-specific work duration based on the following:

- Physiological requirements of the task
- PPE level for the task
- Ambient temperature and humidity
- Respiratory Protection Capacity
- Chemical Protective Clothing Capacity
- Acclimatization of work force

Employees are informed about task-specific work duration by the SSHO, during initial training and whenever a change is necessary. Work duration is consistent with the requirements outlined in Chapter 8, Thermal Stress and the respiratory capacity for the assigned PPE. Work duration is continuously re-evaluated in response to changes in working conditions.

8. 4. Training

Employees receive general training regarding proper selection, use and inspection of PPE during initial HAZWOPER training or equivalent as well as subsequent refresher training. Site-specific PPE requirements, including task-specific PPE, ensemble components, cartridge/canister service times, and inspection and maintenance procedures are communicated as identified in Chapter 4, Training.

8. 5. Respiratory Protection

The type of respiratory protection used on site are identified above. Respiratory protection is selected, fitted, used, stored and maintained in accordance with the Enviroserv Respiratory Protection Program. A copy of the Respiratory Protection Program is maintained in the command area. The written Respiratory Protection is consistent with the other requirements of this HASP.

For this project, APR cartridges will be replaced daily until information is available from the manufacturer or other source to justify a less conservative change-out schedule.

8. 6. Hearing Conservation.

Employees must use hearing protection when noise exposures equal or exceed an 8-hour time-weighted average sound level of 85 dBA. Where noise exposure meets or exceeds this level, noise is listed as a physical hazard in the JHA for the tasks/operation, and hearing protection is included as one of the control measures (PPE). Employees required to use hearing protection participate in a Hearing Conservation Program. Currently, no site tasks have noise exposure that equals or exceeds the 85 dBA limit.

8. 7. PPE Maintenance & Storage

PPE is used, cleaned, inspected, stored and replaced according to Enviroserv corporate policy. Defective or damaged equipment is not used and is reported to James Kapin so that the equipment can be repaired or discarded. Spent and disposable PPE is discarded in the manner specified in Chapter 10, Decontamination. After decontamination, reusable PPE is properly stored, according to the manufacturers' recommendations.

8. 8. Evaluation of PPE Program

Evaluation of the effectiveness of site PPE selections occurs throughout site activities in response to employee exposure monitoring results and employee feedback. James Kapin is responsible for modifying initially selected PPE. Affected employees are immediately informed about these modifications and are provided with additional training if necessary. The JHAs in Chapter 2 of the HASP are also updated as needed to reflect current information about job hazards and selected controls.

Section 9 - Exposure Monitoring

This chapter of the HASP describes how employee exposures to hazardous substances are monitored. This chapter provides site-specific information about:

- air monitoring procedures,
- equipment calibration and maintenance, and
- the handling and management of monitoring data.

James Kapin is responsible for implementing site exposure monitoring procedures.

James Kapin and Walter Vargas are qualified to use the air monitoring instruments at this site and to interpret monitoring results.

9. 1. Air Monitoring

Employee exposures to airborne hazardous substances will be evaluated during site operations to ensure that exposure controls are effectively chosen and modified as needed on a timely basis. The approach to air monitoring is consistent with CAL/OSHA requirements in HAZWOPER and includes:

- initial monitoring prior to the beginning of site activities to identify conditions that may cause death or serious harm and to permit preliminary selection of site controls,
- personal monitoring after site activities begin so that employee exposures are quantified and fully characterized, and
- periodic monitoring throughout site operations when conditions and employee exposures may change rapidly.
- Timing and frequency of monitoring will be based on planned work activities and will target "worst-case" situations.

Air monitoring for this project is conducted using direct-reading instruments only, due to the limited duration of the project. Consistent with HAZWOPER, personal air measurements will be made in the breathing zones of employees expected to have the highest exposure during the task or operation being evaluated. If exposures for these employees exceed the exposure limits, additional samples are collected in the breathing zones of all employees likely to have similar exposures. Full-shift and short-term samples will be collected, providing quantitative results that can be compared to OSHA Permissible Exposure Limits and other published exposure limits

9. 2. Task-Specific Air Monitoring Procedures,

Chemical	Task	Monitored by:	Frequency (as described above)	Exposure Level (lowest)
Acid Mist (Nitric, Hydrochloric)	Containerization	Real Time Aerosol Monitor, correlated with colorimetric tube readings	Periodically, during task	5 mg/m ³ (C)
Cyanide	All	Direct reading meter	Periodically, during task	4.7 ppm (REL-STEL)
Chromium Compounds	All	Real Time Aerosol Monitor, correlated with colorimetric tube readings	Periodically, during task	0.01 mg/m ³ (TLV-TWA)
Organic Vapors	As necessary (not planned)	Photo-ionization detector, organic vapor monitor	Periodically, during task	Lowest applicable OEL

9. 3. Equipment Calibration and Maintenance

The table below lists the specific monitoring instruments and the calibration procedures used on this site. Instruments are calibrated and maintained according to the manufacturers' recommendations.

Copies of the manufacturers' recommendations and instrument calibration and maintenance records are maintained in the Command Area.

Instrument	Serial #	Type of Calibration	Frequency
Real-Time Aerosol Monitor	TBD	Fresh Air Zero	Daily, before use
Real-Time Aerosol Monitor	TBD	Factory Calibration	According to Manufacturer specification
Electro-chemical Cyanide Sensor	TBD	Fresh Air Zero	Daily, before use
Electro-chemical Cyanide Sensor	TBD	Factory Calibration	According to Manufacturer specification
Colorimetric Tubes	NA	None Required	NA
Qrae 4-gas meter	TBD	Fresh Air Zero	Daily before use
Qrae 4-gas meter	TBD	Factory Calibration	According to Manufacturer specification
MiniRae PID	TBD	Fresh Air Zero	Daily, before use
MiniRae PID	TBD	Factory Calibration	According to Manufacturer specification
GasTech GT240	TBD	Fresh Air Zero	Daily, before use
GasTech GT240	TBD	Factory Calibration	According to Manufacturer specification

9. 4. Handling and Maintenance of Monitoring Data

All instruments used on-site will be logged in the "Instrument Data Sheet". Instrument readings will be documented on the "Instrument Reading Log Form". All records will be maintained in the Control Area.

9. 5. Noise Monitoring

As indicated in the JHAs for this site, employees may be exposed to sound levels that meet or exceed 85 dBA while conducting certain tasks/operations. Consequently, noise monitoring is conducted in accordance with the Hearing Conservation Program, located in/at Command Area.

Section 10 - Thermal Stress

This section of the HASP describes how the site-specific environmental conditions (temperature, humidity, air movement), work loads, and PPE may expose workers to hazards resulting in injury or illness related to heat stress. This Heat Stress Prevention Program outlines exposure controls to protect workers working in hot environments. James Kapin is responsible for implementing this program.

10. 1. Implementation Criteria

The Heat Stress Prevention Program is implemented when the work area temperature rises above 80°F unadjusted temperature. When temperatures rise above this temperature, relative humidity is measured and the Heat Stress Index (HSI) is calculated, based on the procedures in 8 CCR 3395. When HSI exceed 90, appropriate guidelines for limiting heat strain, as described in the 2005 Threshold Limit Values documentation from the American Conference of Governmental Industrial Hygienists, will be implemented. When HIS exceed 90, air temperatures in the work area are measured and the values are recorded Command Area.

10. 2. Prevention Strategies

Work practices and exposure controls are used to reduce the risk of elevating a worker's core body temperature. These work practices and exposure controls include the following:

- monitoring for signs of heat stress
- providing shaded rest areas protected from radiant heat
- using a liquid replacement program

Monitoring

Workers monitor each other's actions, speech, and appearance for signs and symptoms of heat-related illnesses including heat exhaustion and heat stroke. Physical signs and symptoms of heat exhaustion include headache, nausea, vertigo, weakness, thirst, and giddiness. Heat exhaustion may progress to heat stroke if a worker is unable to cool and re-hydrate their body. The primary signs and symptoms of heat stroke are confusion; irrational behavior; loss of consciousness; convulsions; a lack of sweating (usually); hot, dry skin; and an abnormally high body temperature. Workers should be aware of the key differences between the signs and symptoms of heat stroke and those of heat exhaustion, such as the lack of sweating, the color of the skin (red), and the rise in body temperature. Heat stroke is a medical emergency that requires immediate medical attention. Physical signs and symptoms of heat stress are discussed with workers As needed, based on conditions and reviewed as necessary.

Rest Areas

Rest areas that are shaded and protected from radiant heat are located in the Office Area. Rest areas are equipped with cool (50° - 60°F) liquids.

Liquid Replacement Program

Since dehydration is a primary cause of heat illness, workers on this site follow a regimen for liquid consumption detailed below.

Work Area Temperature Range	Work Period Between Drinks	Minimum Quantity (Ounces)	Liquid Type
80 - 90	60 minutes	2 cups(1 pint)	Water

10. 3. Medical Management

If a worker exhibits signs or symptoms of heat exhaustion or heat stroke, the worker will be removed from area, hydrated and allowed to rest. If symptoms persist, medical help will be sought immediately

10. 4. Training

Workers receive general training regarding thermal stress-related injuries and illnesses during initial HAZWOPER training and subsequent refresher training. The site-specific program and procedures are described in Chapter 4, Training.

Section 11 - Spill Containment Program

This chapter of the Health and Safety Plan describes the potential for hazardous substance spills at this site and procedures for controlling and containing such spills. The purpose of this chapter of the Plan is to ensure that spill containment planning is conducted and appropriate control measures are established.

The spill containment program is consistent with OSHA requirements in 29 CFR 1910.120(b)(4)(ii)(J) and (j)(1)(viii) as well as 8 CCR 5192 (b)(4)(ii)(J) and (j)(1)(viii) and addresses the following site-specific information:

- potential hazardous substance spills and available controls
- initial notification and response
- spill evaluation and response
- post-spill evaluation

In all cases site spill response will be consistent with the level of training and capabilities of the workers and will be in compliance with all federal, state and local requirements.

11. 1. Potential Spills and Available Controls

An evaluation was conducted to determine the potential for hazardous substance spills at this site. That evaluation indicates that a hazardous substance spill could potentially occur. Therefore, the following site-specific spill containment program has been implemented to address spill containment planning, equipment, and procedures. Site personnel are trained in the contents of this spill containment program and their roles and responsibilities during spill response operations.

Wherever spills, leaks, or ruptures can occur, this site keeps suitable quantities of proper absorbent and US Department of Transportation-specified salvage drums/containers. In addition, all areas subject to potential spills are diked or a means to adequately dike these areas in the event of a spill is available so that the entire volume of the hazardous substance being spilled can be contained and isolated. Where hazardous materials are not currently stored within secondary containment, sandbags and plastic sheeting will be used to create berms and secondary containment. In addition, all hoses and couplings will be mechanically fastened closed (where possible) and all coupling will be wrapped with appropriate absorbent materials to prevent an accidental release.

11. 2. Initial Spill Notification and Response

Any worker who discovers a hazardous substance spill will immediately notify James Kapin. The worker will, to his/her best ability, report the hazardous substance involved, the location of the spill, the estimated quantity of material spilled, the direction/flow of the spill material, related fire/explosion incidents, and any associated injuries. The site Emergency Response Plan will immediately be implemented if an emergency release has occurred.

11. 3. Spill Evaluation and Response

James Kapin is responsible for evaluating spills and determining the appropriate response. The procedures of this chapter of the HASP will be implemented when the spill is determined to require emergency precautions and action. If necessary to protect nearby community members, notification of the appropriate authorities will be made.

For non-emergency, incidental spills, personnel will receive instructions in a pre-cleanup meeting as to spill conditions, PPE, response activities, decontamination, and waste handling. The following are general measures that response/ cleanup personnel take when responding to a spill:

- Hazardous substance and contaminated soils, control/absorbent media, drums, containers, and other contaminated materials will be properly stored and labeled in order to minimize the potential for a hazardous spill.

- When a spill occurs, only those persons involved in overseeing or performing spill containment operations will be allowed within the designated hazard areas. If necessary, the area will be roped, ribboned or otherwise blocked off. Unauthorized personnel are kept clear of the spill area.
- Appropriate PPE, as specified during the pre-cleanup meeting, will be donned before entering the spill area.
- Appropriate spill control measures will be specified in the pre-cleanup meeting and applied during spill response.
- Whenever possible without endangerment of personnel, the spill will be stopped at the source or as close to the source as possible.
- Ignition points will be removed if fire or explosion hazards exist.
- Surrounding reactive materials will be removed.
- Drains or drainage in the spill area will be blocked or surrounded by berms to exclude the spilled waste and any materials applied to it.
- Small spills or leaks from a drum, tank, or pipe will require evacuation of at least 50 feet in all directions to allow cleanup and to prevent employee exposure. For small spills, sorbent materials such as sand, sawdust, or commercial sorbents are placed directly on the waste to prevent further spreading and aid in recovery.
- If any spill is large and/or continuing, an initial isolation area of at least 100 feet in all directions will be used. Large spills will be diked at the leading edge of the spill. Berms of earthen or sorbent material will be constructed downstream of the leading edge of the spill to contain it. Where feasible, pumps will be utilized to transfer the liquid to appropriate containers.
- Spill area will be sprayed with appropriate foam where the possibility of volatile emissions exist.
- If the spill results in the formation of a toxic vapor cloud, from vaporization, or reaction with surrounding materials or by the outbreak of fire, further evacuation may be required.
- To dispose of spill waste, all contaminated sorbents, liquid waste, or earthen material will be cleaned up and placed in small quantities (<300 pounds) in approved drums for proper storage or disposal as hazardous waste.
- If any spill is large and/or continuing and cannot be managed by available resources, workers will evacuate to designated upwind refuge points, as identified in daily briefings. Evacuation route will vary depending on work activities, but in all cases, workers should exit Exclusion Zone via nearest exit, unless that would present greater hazards than another exit.
- If a spill response exceeds the level of training or capabilities of site workers, workers will immediately evacuate as described above and activate emergency procedures, as described in above.

11. 4. Post-Spill Evaluation

A written spill response report is prepared at the conclusion of clean-up operations. The report includes, at a minimum, the following information:

- date of spill incident
- cause of incident
- spill response actions
- any outside agencies involved, including their incident reports
- lessons learned or suggested improvements

The spill area is inspected to ensure the area has been satisfactorily cleaned. The use of soil, water, and air sampling is utilized in this determination as necessary. The root cause of the spill is examined and corrective steps taken to ensure the engineering and control measures in place have performed as required. If alternative precautions or measures are needed, they are made available and implemented. All durable equipment placed into use during cleanup activities is decontaminated as specified in the Decontamination chapter of this HASP for future utilization.

Section 12 - Decontamination Program

The decontamination section of the Health and Safety Plan describes how personnel and equipment are decontaminated when they leave the Exclusion Zone. The site decontamination procedures are designed to achieve an orderly, controlled removal or neutralization of contaminants that may accumulate on personnel or equipment. These procedures minimize worker contact with contaminants and protect against the transfer of contaminants to clean areas of the site and off-site. They also extend the useful life of PPE by reducing the amount of time that contaminants contact and can permeate PPE surfaces. The decontamination procedures described below are designed to meet the requirements of 1910.120(k) and 8 CCR 5192 (k).

Emergency decontamination procedures are detailed in the Emergency Response section of this HASP.

James Kapin oversees implementation of site decontamination procedures and is responsible for ensuring their effectiveness.

12. 1. Site Decontamination Facilities

Decontamination on this site is conducted in the contamination reduction zone (CRZ). The CRZ acts as a buffer between the hot-zone and the support zone. The location and design of decontamination stations minimize the spread of contamination beyond these stations.

12. 2. Decontamination Procedures for Personnel and PPE

Decontamination procedures on this site are designed for the level of PPE used. Site-specific procedures for personnel and PPE decontamination minimize the potential for hazardous skin or inhalation exposure and to avoid cross-contamination and chemical incompatibilities. Based on the nature of the hazards and duration of work, showers and change rooms are not necessary and are not provided for workers.

The following are general decontamination procedures established and implemented at this site. More specific procedures for personnel and PPE decontamination are provided below.

- Decontamination is required for all workers exiting a contaminated area. Personnel may re-enter the Support Zone only after undergoing the decontamination procedures described below in the next section.
- Protective clothing is decontaminated, cleaned, laundered, maintained and/or replaced as needed to ensure effectiveness.
- PPE used at this site that requires maintenance or parts replacement is decontaminated prior to repairs or
- PPE used at this site is decontaminated or prepared for disposal on the premises. Personnel who handle contaminated equipment have been trained in the proper means to do so to avoid hazardous exposure.
- The site requires and trains workers that if their permeable clothing is splashed or becomes wetted with a hazardous substance, they will immediately exit the work zone, perform applicable decontamination procedures shower, and change into uncontaminated clothing.
- Procedures for disposal of decontamination waste meet applicable local, State, and Federal regulations

Decontamination stations will be set up at each exit from the control zone. These will consist of appropriate changing facilities that will allow workers to remove potentially contaminated clothing and protective equipment. Appropriate waste containers will be available for disposable equipment. Equipment that will be re-used will be immediately cleaned, or placed in an appropriate storage container for later cleaning.

12. 3. Decontamination Procedures for Equipment

All tools, equipment, and machinery from the Exclusion Zone or CRZ are decontaminated in the CRZ prior to removal to the Support Zone. Equipment decontamination procedures are designed to minimize the potential for hazardous skin or inhalation exposure and to avoid cross-contamination and chemical incompatibilities.

12. 4. Monitoring the Effectiveness of Decontamination Procedures

Visual examination is used to evaluate the effectiveness of decontamination procedures, in compliance with 29 CFR 1910.120(k)(2)(iv) and 8 CCR 5192 (k)(2)(iv). Visual examination is used to ensure that procedures are implemented as described and that they appear to control the spread of contaminants under changing site conditions. Visual examination is also used to inspect for signs of residual contamination or for contaminant permeation of PPE. Air sampling is used to verify the effectiveness of decontamination. Air samples are taken in the clean zone to ensure that airborne contaminants have not spread to clean areas of the site. The type and frequency of air sampling used to ensure the effectiveness of decontamination procedures are detailed in the Exposure Monitoring section of this HASP.

Results of the inspections of decontamination procedures and documentation of any action taken to correct deficiencies are recorded and stored at Command Area. Personnel who work in contaminated areas of the site, either the Contamination Reduction Zone (CRZ) or the Exclusion Zone, are trained in the principles and practices of decontamination described in this section of the HASP and in related SOPs. If site procedures are changed as a result of inspection and monitoring, all affected employees are notified of these changes.

Section 13 - Emergency Response/Contingency Plan

13. 1. Medical Emergency

Survey the situation:

- Do not enter an area that may jeopardize your safety.
- Establish the patient's level of consciousness.
- Call for help.
- Contact Emergency Medical Services and inform them of patient's condition.

Primary Assessment (patient unconscious)

- Arousal
- Airway
- Breathing
- Circulation
- Only trained personnel should perform CPR or First Aid.

Secondary Assessment (patient conscious)

- Check for bleeding: Control with direct pressure.
- Do not move patient (unless location is not secure).
- Monitor vital signs.
- Provide First Aid to the level of your training.
- Contact the PM and HSR as soon as possible.

13. 2. Fire Emergency

Evacuate the area.

- Notify the Emergency Services.
- Extinguish small fires with an all-purpose extinguisher.
- Contact the PM and HSR.

13. 3. Spill/Release

Prevent problems by documenting the location of underground lines (e.g., product, sewer, telephone) before starting site work. If you drill through a line or tank or another leak occurs, document the spill/release in writing. Include dates, times, actions taken, agreements reached and names of people involved. In the event of a spill/release, follow this plan.

- Wear appropriate PPE; stay upwind of the spill/release.
- Turn off equipment and other sources of ignition.
- Turn off pumps and shut valves to stop the flow/leak.
- Plug the leak or collect drippings in a bucket, when possible.
- Place sorbent pads to collect product, if possible.
- Call Fire Department immediately if fire emergency develops.
- Do not transport or approve transportation of contaminated soils or product until proper manifests have been completed and approved. Be aware that soils/product may meet criteria for hazardous waste.

- If evacuation is necessary, move to upwind evacuation point, as identified in the daily site briefing

13. 4. Notification

A spill/release requires completion of a preliminary incident report (PIR) and Class III notification. If a significant spill or release to the environment occurs, it will be reported to the proper government agencies including:

- Glendale City Fire Department Environmental Management Center, 780 Flower Street, Glendale, CA, (818) 548-4030
- Governor's Office of Emergency Services, California State Warning Center – 1 800-852-7550

If the spill extends into waterways, the Coast Guard and the National Response Center (1-800-424-8802) must be notified immediately.

Section 14 - Confined Spaces Program

This section of the Health and Safety Plan represents the site-specific written confined space entry program. The purpose of this section of the Health and Safety Plan is to identify all permit-required confined spaces (permit spaces) on site and to describe the procedures that have been developed and implemented to ensure worker safety and health in permit-required confined spaces. In compliance with the requirements of 29 CFR 1910.120(b)(4)(ii)(I) and 8 CCR 5192 (b)(4)(ii), this section of the HASP is included even when no permit-required confined spaces are present on site in order to indicate that a site-specific evaluation for permit spaces has been made.

This permit-required confined space program (permit space program) includes the elements specified in 29 CFR 1910.146 and Article 108 of 8 CCR and provides the following site-specific information:

- identification and evaluation of permit spaces
- measures to prevent unauthorized entry
- entry permit system
- entry equipment and personal protective equipment
- entry procedures
- permit spaces training
- rescue and emergency procedures
- employee participation

The person with overall responsibility for the permit space program is James Kapin. The permit space program is modified to reflect changing site conditions or work operations. This program is reviewed if any of the following

- occurrence of unauthorized entry of a permit space
- discovery of a permit space hazard not covered by the permit
- detection of a condition prohibited by the permit
- occurrence of a injury or near-miss during entry
- change in the use or configuration of a confined space
- employee complaints of permit space program

Additionally, an annual review of all entries performed during the previous 12 month period is conducted. If no entries were made into a permit space, then no annual review is performed.

14. 1. Identification and Evaluation of Permit Spaces

This site has been carefully evaluated by James Kapin on 02/26/2005 and there are no confined spaces on this site.

Section 15 - Hotwork

This Chapter of the Health and Safety Plan address site welding and cutting operations. The purpose of this chapter is to establish procedures that protect workers from safety and health hazards associated with these operations

The hot work section of this HASP is consistent with the requirements of 29 CFR 1910.252 (a), 8 CCR 4848 as well as 19 CCR 1.09(b) and addresses the following site specific information:

- Designated areas and other hot-work locations
- Hot work permits
- Fire watch
- Hot work SOPs

15. 1. Designated Areas and Other Hot Work Locations

Welding and cutting on this site will only be performed in designated areas that have been made fire-safe.

Cutting of welding in undesignated areas will only be done after a hot work permit has been obtained, as described below. Cutting and welding are prohibited at all times in the following locations

Prohibited Location	Reason
Within 3 feet of flammable liquid containers or compressed gas cylinders	Possibility of fire

15. 2. Hot Work Permit

A written hot work authorization is required and issued prior to any welding or cutting operation outside the designated areas. The hot work permit is authorized only after the area is inspected by the Site Safety Officer

The hot work permit will be conspicuously posted in the area where welding and cutting is being performed. On the permit, the site safety officer will note any necessary precautions for the specific welding or cutting operation, including (but not limited to) fire watch, guarding and fire extinguishing equipment.

15. 3. Fire Watch

Fire watch is required by the hot work permit when any of the following conditions exist:

- Potential for development of other than a minor fire
- Appreciable combustible material, in building construction or contents, within 35 feet
- Appreciable quantities of combustibles greater than 35 feet away, but easily combustible
- Wall or floor openings within 35 feet that expose combustible materials in adjacent area (including concealed spaces in walls or floors)
- Combustible materials adjacent to the opposite side of metal partitions, walls, ceilings, roofs. Etc. that are likely to be ignited by heat conduction or radiation

Fire watchers will be equipped with fire extinguishers, as indicated on the permit. They will be trained in the use, operation and limitations of fire extinguishing equipment, as well as appropriate emergency procedures including alerting procedures. If a fire is discovered in an area under watch, that fire will be extinguished if appropriate, based on the size and location of the fire, or otherwise sound an alarm. Fire watch will be maintained for not less than ½ hour after the completion of the welding and cutting to detect and extinguish possible smoldering fires. A blank permit is included in section 17.4

15. 4. Hot Work SOPs

The following standard operation procedures (SOPs) will be followed for all hot work on this site:

- Cutting and welding will only be performed by suitably trained workers
- Sub-contractors who may perform hot work or who work in proximity to hot work operations will be advised about the location of flammable materials or other hazardous conditions
- Combustibles will be removed from hot work areas. Where materials cannot be removed they will be protected.
- Openings or cracks in flooring or walls, open doorways, and open or broken windows are effectively closed or precautions taken to protect readily combustible material onto which sparks or slag may drop.
- Suitable fire extinguishing equipment is maintained and ready for use at all welding or cutting operations.
- Combustible materials are cleared within a minimum radius of 35 feet around welding or cutting operations or, where it is not possible to clear the area, the combustibles are protected with appropriate covers or shields.
- Where floors or surrounding ground are wetted, arc welding or cutting equipment operators wear appropriate PPE in accordance with 29 CFR 1910 Subpart I (Personal Protective Equipment).
- James Kapin has the authority and responsibility to interrupt other site operations that might expose combustibles to ignition during cutting and welding.
- Hot work is not performed on drums, barrels, tanks, or other containers until they have been thoroughly cleaned and it is determined that hot work operations on the vessel will not produce flammable or toxic vapors.
- Pipelines or connections to drums or other containers are disconnected or blanked prior to hot work.
- All hollow spaces, cavities, and containers are thoroughly vented, and preferably purged with inert gas, to allow escape of air or gases prior to any preheating, cutting, or welding.
- Confined spaces: where arc welding is performed, all electrodes are removed from holders, the holders are carefully located to prevent accidental contact, and the power source to the machine is disconnected when work is suspended for any substantial period of time, such as during lunch hour or overnight.
- Confined spaces: torch valves shall be closed and the gas supply to the torch positively shut off at some point outside the confined space on all gas welding or cutting equipment when the torch is not to be used for a substantial period of time, such as during lunch hour or overnight

Section 16 - Hazardous Energy Control Program

This section of the Health and Safety Plan represents the site-specific hazardous energy control program. The purpose of this section of the Health and Safety Plan is to identify all machine and equipment repair and maintenance activities that require LOTO procedures under 29 CFR 1910.147 and 8 CCR 3314.

Lab Packing, Hazard Categorization, Chemical Bulking and Staging/Transportation tasks do not require a LOTO program or procedures. Based on the apparent state of disrepair of the electrical system, all areas where work will be conducted need to be de-energized prior to beginning that phase of work. It may prove easier to de-energize the entire site and rely on temporary power.

An outside contractor will be brought into de-energize, lockout and test as appropriate to ensure that Enviroserv personnel are not exposed to electrical hazards.